Subject Index

Absorption
Influence of Surface Finish on Sorptivity on Concrete, 705

Acceleration
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267

Accelerators (Particles)
Building the SSC: A Texas-Sized Challenge, 1263

Accident data
Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043

Accident prediction
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Accident prevention
Analysis of Back Injuries in Construction, 118
Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042

Accident risks
Hazmat Transport Risks: Societal and Individual Perspectives, 1039

Accounting
Keeping the Books: A Taxing Task, 1307

Accreditation
Bachelor of Civil Technology and Civil Engineering Programs, 768
Restructuring the Engineering and Engineering Technology Relationship, 773

Accuracy
Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151
Correction for Settlement of Parshall Flume, 660

Acetate
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317

Acidic water
Acidification Potential of Snowpack in Sierra Nevada, 12
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301

Acoustic measurement
Development of Interferometer for Acoustic Emission Testing, 285

Acoustic waves
Development of Interferometer for Acoustic Emission Testing, 285

Acoustics
Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Acquisition
Knowledge-Based Design of Project-Procurement Process, 57

Activated carbon
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335
Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Activated sludge
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366

Activated sludge process
Cr(III) in Activated Sludge, 306

Active control
Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
Minimum Variance Control of Base-Isolated Floors, 829
Optimal Direct Output Feedback of Structural Control, 276
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949
Simple Model for Optimal Control of Tall Buildings, 857
Stability of Active-Tendon Structural Control with Time Delay, 207
Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Adaptive systems
Minimum Variance Control of Base-Isolated Floors, 829
Position-Force Adaptive Control for Construction Robots, 27

Adhesive bonding
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166

Admixtures
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Adsorbents
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343

Adsorption
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335

Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363
Cr(III) in Activated Sludge, 306
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318
Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342
Sorption and Desorption of Dyes by Sulfonated Coal, 320

Advection
Comparison of Physical Transport Processes in Noncohesive River Sediments, 303
Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571

Aeration
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366
MSA for VOC Removal, 1216
Oxygen Transfer in Bubbly Turbulent Shear Flow, 493
Pulsation Errors in Compressible Flow Measurement, 323
Self-Aerated Flows on Chutes and Spillways, 506

Aerial photographs
Population Estimation of City from Aerial Photographs: Riyadh Case, 1100

Aerial photography
New Wells Safeguard Scenic Tahoe, 1234

Aerobic treatment
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305

Aerodynamics
Bridge Buffeting by Skew Winds in Erection Stages, 163
Delamination Effect on Flutter of Homogeneous Laminated Plates, 34
Effect of Sidewalk Vents on Bridge Response to Wind, 832
Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824
Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825
Gust Buffeting. II: Dynamic Alongwind Response, 826
Multiple-Zone Potential Solution around Wing-Body Configurations, 37
Problematics in Formulation of Wind-Force Models for Bridge Decks, 229
Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Aeroelasticity
Effect of Sidewalk Vents on Bridge Response to Wind, 832
Problematics in Formulation of Wind-Force Models for Bridge Decks, 229
Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19
Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Aerospace engineering
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38

Africa
Coastlines of Western Africa, 1343
Microsystems Irrigation in Niger, West Africa, 647

Age factors
Creep of Mass Concrete at Early Ages, 724

Aggregate gradation
Effects of Aggregate Top Size on Bituminous Concrete, 732

Aggregates
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730
Effects of Aggregate Top Size on Bituminous Concrete, 732
Prediction of Bedding Intrusion into Low-Strength Subgrades, 396

Aggregation
Tropical Clays. I: Index Properties and Microstructural Aspects, 426

Aging
Concrete Toughness After 20 Years, 885
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Agricultural economics
Overview of Soil Erosion From Irrigation, 649

Agricultural engineering
Reduction of Deep Percolation and Drain Water, 622

Agricultural wastes
Prognosis on Managing Trace Elements, 623
Treatment, Reuse, and Disposal of Drain Waters, 616

Air entrainment
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708
Self-Aerated Flows on Chutes and Spillways, 506

Air flow
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341

Air Force
Infrastructure-Management-System Analysis, 1090

Air pollution
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Predicting Pollution, 1228

Air quality
OCEA Goes Green, 1252

Air traffic
Assessing Potential for Superhub Airport for California, 1071
Distributed Air-Traffic Control. I: Theoretical Studies, 1072
Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073
Risk and Capacity Impacts of ATC Separation Rules, 1074

Air transportation
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070
Analyses of Canadian Air Travel Demands, 1048
Assessing Potential for Superhub Airport for California, 1071

Air water interactions
Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511

Aircraft
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070
Multiple-Zone Potential Solution around Wing-Body Configurations, 37
System Flexibility and Reflected Pressures, 35

Airfields
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058

Airlines
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070

Airport construction
Airport Pavement Innovations—Theory to Practice, 1325
The Denver Airport: Managing a Megaproject, 1236
Pittsburgh Goes International, 1190
Reclaiming Clear-Cut Land, 1298

Airport design
Pittsburgh Goes International, 1190
Runway Rehab: A Case for CADD, 1242

Airport runways
Microcomputer Model for Design and Location of Runway Exits, 1053

Airport site selection
Assessing Potential for Superhub Airport for California, 1071

Airport terminals
Pittsburgh Goes International, 1190

Airports
Airport Pavement Innovations—Theory to Practice, 1325
Airport Towers: A New Generation, 1296
Machine-Friendly Facility, 1202
Risk and Capacity Impacts of ATC Separation Rules, 1074
Traversing the Terminals, 1269

Alaska
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349
GIS and Storm-Water Management, 1278
New Course in Management of Cold Regions Construction, 50
Water Pipelines: Tackling Toxics, 1238

Alfalfa
Alfalfa Irrigation During Drought, 661

Algorithms
Application of Filtering Techniques for Incident Detection, 1028
Application of GIS Network Routines for Water Flow and Transport, 1114
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
DBID: Analogy-Based DSS for Bidding in Construction, 109
Discrete Volume-Element Method for Network Water-Quality Models, 1133
Integrated Genetic Algorithm for Optimization of Space Structures, 36
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502
KBES for Design of Steel Structural Elements, 52
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011
Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167

Alignment
Decision Analysis of Alternative Highway Alignments, 1049

Alkalinity
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301

Alluvial channels
Alluvial Resistance in Transition Regime, 534
Effect of Bank Stability on Geometry of Gravel Rivers, 574
Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497

Alluvial fans
Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139
Two-Dimensional Water Flood and Mudflow Simulation, 507

Alluvial streams
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Alluvium
Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625

Aluminum
Ups and Downs in Chicago, 1302

Ammonia
Oxygen Transfer in Trickling Filters, 364

Amplitude
Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166

Anaerobic digestion
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317

Anaerobic processes
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Effects of Wastewater Composition on Stability of UASB, 358
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304
Novel Technique for Evaluation of Advanced Anaerobic Reactors, 359

Analysis
Analysis of Highway Project Construction Claims, 748
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Compression Response of Cracked Reinforced Concrete, 1009
Critical Depth Equations for Irrigation Canals, 608
Dependence of Coefficient *K* on Grain Size, 1180
Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871
High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176
Nonunique Water-Surface Profiles in Open Channels, 579
Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080
Wave Attenuation by Vegetation, 1149

Analytical techniques
Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194
Hydraulics of Center-Pivot Laterals, 621
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332

Anchor bolts
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Anchor plates
Force-Displacement Behavior of Flexible Plate Anchors, 409

Anchorages
X-Bracing Anchorage Connection, 996

Anchors
Behavior of Chemically Bonded Anchors, 961
Estimation of Uplift Capacity of Helical Anchors in Clays, 394
Field Tests of Anchors in Clay. I: Description, 465
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Force-Displacement Behavior of Flexible Plate Anchors, 409
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Angle section
Ultimate Load Capacity of Single Steel Angles, 821

Anion exchange
Acidification Potential of Snowpack in Sierra Nevada, 12

Anisotropic materials
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228
Failure Criteria for Fibrous Anisotropic Materials, 710
Plasticity Model for Transversely Isotropic Materials, 192

Anisotropic soils
General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468

Anisotropy
Anisotropy Studies on Cuboidal Shear Device, 436
Electrical Response of Two-Phase Soil: Theory and Applications, 451
Green's Functions for Transversely Isotropic Elastic Half Space, 251

Antennas
Attitude Determination with Ashtech 3-D Direction Finding System, 1015
Statistical Sensitivity Analysis of Lattice Space Structures, 31
Technology Assessment and Development of Large Deployable Antennas, 18

Antitrust laws
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760

Application methods
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6

Approximation methods
Analysis of Multiple-Bay Frames Using Continuum Model, 834
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863

Minimum Lateral Stiffness for Equally Spaced Braces in Columns, 261
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869
Smooth Boundary Approximation for Directly Computing Irregular Area, 1020

Aquatic environment
Towards a Modeling Support System for Simulation of Water Quality, 70

Aqueducts
Hydraulic Design of Flume Aqueducts, 509

Aquifer characteristics
Aquifer Characteristics and Long-Term Ground-Water Levels, 588

Aquifers
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542
Estimation and Optimization of Transient Seepage with Free Surface, 655
Evaluating Artificial Recharge Needs of Aquifer, 1137
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67
Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587
Movement of Ground Water in Converging Aquifer, 602
Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332
Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Arbitration
Contemporary Model of Civil Engineering Failures, 771
More Than an Underground Success, 1299

Arches
Arches For A Parkway, 1290
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Nonlinear Analysis of Space Frames with Finite Rotations, 806
Propagating Instabilities in Long Shallow Panels, 181
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193

Arctic engineering
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147
Cold Region Logistics Planning and Management, 43

Arid lands
Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139
Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594
Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104
Regional Irrigation Water Demand, 644
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554

Artesian aquifers
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Artificial intelligence
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55
Cognitive Force Control of Excavators, 26
Computing in Civil and Building Engineering, 1346
Model-Based Planning: Scaled-Up Construction Application, 62
Neural Networks Trained by Analytically Simulated Damage States, 58
Nonmonotonic Reasoning in Design, 53

Artificial recharge
Evaluating Artificial Recharge Needs of Aquifer, 1137

ASCE Activities
Sharing the Pride, 767

ASCE Awards & Prizes
Acidification Potential of Snowpack in Sierra Nevada, 12
Bored Tunneling for Singapore Metro, 7
Discussion of: Analysis of Spiral Vortex and Vertical Slot Vortex Drop Shafts, 5
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Engineering: Environmental vs. Developmental Goals, 1218
Finite Element Analyses of HDR-4 Excavation, 13
Integration of Engineering, Design, and Construction, 14
Knowledge-Based System for Design of Signalized Intersections, 2
Limitations of Conventional Analysis of Consolidation Settlement, 454
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
Microbial Ecology of Crown Corrosion in Sewers, 15
OCEA Goes Green, 1252
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Pioneer Highway, 1250
Process-Based Research to Meet the International Challenge, 106
Robot for Interior-Finishing Works, 9
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Second Roebling Lecture 1991, 80
Seismic Response of R/C Frames with Irregular Profiles, 1
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

ASCE Committees
ASCE Activities Become Global Issues, 786

ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022
Failure of Engineered Facilities: Academia Responds to the Challenge, 745

ASCE Members
ASCE Activities Become Global Issues, 786

ASCE Policy
Bachelor of Civil Technology and Civil Engineering Programs, 768
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764

ASCE Publications
ASCE Annual Combined Index—1992, 1327
Landmark American Bridges, 1367
Transactions of the American Society of Civil Engineers 1992, 1387

Ashes
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330

Asphalt cement
Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730
Recyclability of Moisture Damaged Flexible Pavements, 731
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Asphalt pavements
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222
Recyclability of Moisture Damaged Flexible Pavements, 731
Unwanted Legacy of Asphalt Pavement Compaction, 1086

Asphalts
Construction and Performance of Shoulders Using Unrap Base, 719
Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069
Permanent Deformation in Asphalt Concrete, 704
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Assessments
Practical Models for Organizational Assessment, 666

Assimilation
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Asymmetric structures
Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809

Attenuation
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Attitudes
Attitude Determination with Ashtech 3-D Direction Finding System, 1015
Engineering Women: A View From the Workplace, 663
Faculty Attitudes about Progress of Metrication, 776
Structural and Orbital Conditions on Response of Large Space Structures, 23

Automated transit vehicles
Automated People Movers IV, 1328
Traversing the Terminals, 1269

Automation
Analysis of Segmentation Algorithms for Pavement Distress Images, 1083
Automated People Movers IV, 1328
Automating Inspection of Highway Pavement Surfaces, 1027
Automating Urban Freeways: Financial Analysis for User Groups, 1064
Cognitive Force Control of Excavators, 26
Computer-Aided Planning for Heavy Lifts, 111
Computer-Automated Design of Reinforced Concrete Frameworks, 922
Computer-Automated Design of Semirigid Steel Frameworks, 906
Construction Field Data Acquisition with Pen-Based Computers, 103
Control Method for On-Demand Operation of Open Channel Flow, 596
DACL System Dynamic Performance. I: Response-Prediction Analysis, 583
DACL System Dynamic Performance. II: Laboratory Model Testing, 584
Description and Evaluation of Program: CARIMA, 634
Dynamic Model of Excavator, 25
Experiencing Computer Integrated Construction, 99
Human Factors in Introducing On-Site Construction Automation, 131
Imaging the Future, 1306
Infrastructure-Management-System Analysis, 1090
Irrrigation–Canal—Simulation Model Usage, 627
Machine-Friendly Facility, 1202
Making the Leap, 1247
Managing the Data Explosion, 1237
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Phototriangulation Using CCD Camera in Close-Range Environment, 1017
Position-Force Adaptive Control for Construction Robots, 27
Primitive-Based Classification of Pavement Cracking Images, 1054
Prototype Integrated Cost and Schedule Control System, 61
Prototype Robotic Masonry System, 17
Robot for Interior-Finishing Works, 9
SITE CODE: Computer-Based Regulatory Information for Site Development, 1087
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080
Use of Laser Targeting in Precise Machinery Surveys, 1018

Auto-regressive moving-average model
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327

Axial forces
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Uniaxial Bending of Columns, 873

Axial loads
Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875
Failure Criteria for Fibrous Anisotropic Materials, 710
Interaction of Axial and Lateral Pile Responses, 424
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Observations on Higher-Order Beam Theory, 42
Pile Group Settlement Analysis by Hybrid Layer Approach, 437
Plasticity Model for Transversely Isotropic Materials, 192
Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264
Requirements for Lateral Bracing of Columns with Two Spans, 970

Axisymmetry
Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531
Thermal Stresses in Spherical Shells, 22

Azimuth
Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024

Backfills
Performance of Deep-Corrugated Steel Box-Type Culvert, 400
Speedy Backfilling for Old Mines, 1273

Backwashing
Invasion of the Zebra Mussels, 1233

Backwater
A New Point Estimate Method for Water Resources Modeling, 572

Bank stabilization
Effect of Bank Stability on Geometry of Gravel Rivers, 574

Barges
Turbulence in Rivers due to Navigation Traffic, 525

Bars
Simple Friction Model for Scissor-Type Mobile Structures, 175

Base isolation
Application of Hybrid Sliding Isolation System to Buildings, 272
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981
Friction-Controllable Sliding Isolation System, 259
Minimum Variance Control of Base-Isolated Floors, 829
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819

Bayes Theorem
Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991

Bayesian analysis
Site Exploration Strategy for Geologic Anomaly Characterization, 385

Bays
The Management of Coastal Lagoons and Enclosed Bays, 1368

Beach erosion
Convolution Method for Time-Dependent Beach-Profile Response, 1159
Equilibrium Shoreline Response to Breakwaters, 1187

Beach nourishment
Beach Nourishment Engineering and Management Considerations, 1329

Beaches
Convolution Method for Time-Dependent Beach-Profile Response, 1159
Equilibrium Shoreline Response to Breakwaters, 1187

Beam columns
Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Direct Analysis of Slender Columns with P-Delta Effects, 855
Effect of Slab on Inelastic Response of R/C Buildings, 883
History of Steel Beam-Column Design, 835
Moment-Curvature Relationships for Dented Tubular Sections, 852
New Approach to Buckling of Imperfection-Sensitive Structures, 198
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011
RC Frame Connections Rehabilitated by Jacketing, 886
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988
Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277

Beams
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Blind Bolting W-Shape Beams to HSS Columns, 1002
Complete Stiffness Matrices for Buckling Analysis of Frames, 161

Cyclic Behavior of Moderately Deep HSC Beams, 951
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941
Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214
High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204
Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194
Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828
Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262
Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190
Observations on Higher-Order Beam Theory, 42
Optimum Design of Unstiffened Built-Up Girders, 963
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007
Parallel Connecting Beams for Equivalent Structures, 986
Possible Ranges of End Slope for Cantilever Beams, 185
Seismic Design and Performance of Composite Coupled Walls, 992
Shear Strength of Reinforced Concrete Deep Beams, 937
Simplified Approach for Pile and Foundation Interaction Analysis, 461
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905
Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952

Beams, structural
Crack-Induced Changes in Eigenparameters of Beam Structures, 255

Beams, supports
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968

Bearing capacity
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473
Behavior of Large Bored Piles in Fuzhou, 408
Masonry Carries the Load, 1208
Numerical Evaluation of Terzaghi's N_γ, 410
Seismic Bearing Capacity and Settlements of Foundations, 414
Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277
Tensile and Compressive Shaft Capacity of Piles in Sand, 489
Tests and Ratings of Short-Span Steel Bridges, 928
X-Bracing Anchorage Connection, 996

Bearings
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985
Friction-Controllable Sliding Isolation System, 259
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

Bed load
Comparison of Physical Transport Processes in Noncohesive River Sediments, 303
Critical Shear Stress of Natural Sediments, 522
Incipient Motion of Sand-Gravel Sediment Mixtures, 577
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566

Bed material
Prediction of Bedding Intrusion into Low-Strength Subgrades, 396
Surface Sampling in Gravel Streams, 521

Bedforms
Alluvial Resistance in Transition Regime, 534
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Beds
Particle Size and Chemical Effects on Contact Filtration Performance, 331
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554

Bending
Approximate Moment-Curvature Relationships for Slender Columns, 868
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40
Effective Width of Locally Buckled Plates in Compression and Bending, 882
High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863
Plastic Tripping of Ring Stiffeners, 898
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869
Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160
Thermal Stresses in Spherical Shells, 22
Time-Dependent Shortening of Slender RC Columns, 269

Bending moments
Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277

Benefit cost analysis
Assessing Cost of Dam Failure, 1105
Comparison of Two Corporate Constructability Programs, 129

Documented Constructability Savings for Petrochemical-Facility Expansion, 735
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142
Infrastructure Construction: Effect of Social and Environmental Regulations, 790
RMS: Research Management System, 681

Benefits
Designing Private Funding Programs for Public Highways, 1098

Bentonite
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Bermuda
Responsible Management of Tourist Island, 782

Biaxial compression
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726

Biaxial loads
Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41

Bibliographies
ASCE Annual Combined Index—1992, 1327
Transactions of the American Society of Civil Engineers 1992, 1387

Bicycles
The Bicycle Wheel as Prestressed Structure, 174

Bids
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760
Average-Bid Method—Competitive Bidding Strategy, 89
Deliverance, 1200
Metric Design: It's Real, 1248

Bifurcations
Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240
High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176
Prediction of Plastic Localization Using MRS-Lade Model, 413
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Binders, materials
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Biochemical oxygen demand
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327
Oxygen Transfer in Trickling Filters, 364

Biodegradation
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341
Minimization of Multistage RBC Active Disc Area, 314

Biofilm
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341
Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355
Oxygen Transfer in Trickling Filters, 364

Biographies
Second Roebling Lecture 1991, 80

Biological treatment
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Batch Biological Treatment of Inhibitory Substrates, 352
Biological Treatment of Wastewater from Nitrosophenol Production, 353
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357
Minimization of Multistage RBC Active Disc Area, 314
A Natural Cleanup, 1213
Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354

Biomass
Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321

Black Sea
Coastlines of the Black Sea, 1339

Blast loads
System Flexibility and Reflected Pressures, 35

Blasting
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746

Bolts
Blind Bolting W-Shape Beams to HSS Columns, 1002
Bolted Connection Design Values Based on European Yield Model, 929
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

Bond stress
Analytical Crack Model for Reinforced-Concrete Structures, 881

Bonding
Behavior of Chemically Bonded Anchors, 961
Bonded Tendon Debate, 1266
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278

Bonding strength
Bond and Slip of FRP Rebars in Concrete, 698
Prototype Robotic Masonry System, 17

Bonds, contracts
Trends in Construction Contractor Financial Data, 134

Border irrigation
Border Advance Using Improved Volume-Balance Model, 654

Bored piles
Behavior of Large Bored Piles in Fuzhou, 408
Service Load of Short, Large-Diameter Bored Piles, 462

Boreholes
Stress Analysis of Borehole in Poroelastic Medium, 220

Boring
Comparison of Two Simulation Methodologies in Construction, 116
Site Exploration Strategy for Geologic Anomaly Characterization, 385
Two-Time Winner, 1300

Boston
The Big No-Dig, 1305
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552
MASSPORT Modernization, 1223
Runway Rehab: A Case for CADD, 1242
Tying Up The Artery, 1295

Boundaries, property
Smooth Boundary Approximation for Directly Computing Irregular Area, 1020

Boundary conditions
Distortional Buckling Curves for Composite Beams, 927
Flow through Porous Bed of Turbulent Stream, 169
Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289
Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563
Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264
Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265

Boundary element method
Analysis of Building Frames, 831
Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47
Green's Functions for Transversely Isotropic Elastic Half Space, 251
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195
Piled Rafts in Swelling or Consolidating Soils, 397
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252
Study on Porous Wave Makers, 243

Boundary layer
Mass Transport in Wave Tank, 1152

Boundary layer flow
Evaluation of von Karman's Constant from Integral Flow Parameters, 565

Boundary processes
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244

Boundary value problems
Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Bounding surface
Damage Model for Concrete Using Bounding Surface Concept, 260
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235

Box columns
Postbuckling Analysis of Stiffened Laminated Box Columns, 150

Braced excavation
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431

Bracing
After the Blast, 1230
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841
Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Minimum Lateral Stiffness for Equally Spaced Braces in Columns, 261
Requirements for Lateral Bracing of Columns with Two Spans, 970
Stability of Nonsymmetric Cross-Bracing Systems, 815
Steel Exoskeleton Defines Architecture, 1260
X-Bracing Anchorage Connection, 996

Breaking waves
Classification of Breaking Wave Loads on Vertical Structures, 1169
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179
Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166

Breakwaters
Classification of Breaking Wave Loads on Vertical Structures, 1169
Diffraction of Solitary Waves by Breakwaters, 1150
Equilibrium Shoreline Response to Breakwaters, 1187
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186
Irregular Wave Reflection and Runup on Permeable Slopes, 1178
Water Waves on Crown Breakwaters, 1168
Water Waves on Flexible and Porous Breakwaters, 208
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184
Wave Diffraction Through Submerged Breakwaters, 1183

Bricks
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330

Bridge abutments
Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Bridge anchorages
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888

Bridge approaches
Banking on a Bridge, 1219
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Bridge construction
Bonded Tendon Debate, 1266
Bridge Buffeting by Skew Winds in Erection Stages, 163
Bridge Planning Using GIS and Expert System Approach, 66
Closing the Loop, 1259
Concrete over the Connecticut, 1193
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Recycling on the Mississippi, 1207

Bridge decks
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Bridge Buffeting by Skew Winds in Erection Stages, 163
Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824
Field Evaluation of Preformed Membranes, 1047
Moments in Deck Slabs Due to Cantilever Loads, 907
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Problematics in Formulation of Wind-Force Models for Bridge Decks, 229

Bridge design
Banking on a Bridge, 1219
The French Composite: A Bridge for Normandy, 1205
Response of Long-Span Soil-Metal Structures, 836
Structural Engineering in Natural Hazards Mitigation, 1386
Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Bridge failure
Collapse of Ashtabula Bridge on December 29, 1876, 742
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888
Merging Laboratory and Field Data in Bridge Scour, 564
The Silver Bridge Collapse Recounted, 754
What Sank the Lacey Murrow?, 1293

Bridge foundations
Banking on a Bridge, 1219

Bridge inspection
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Microcomputer Bridge Management System, 1031
Probability-Based Bridge Inspection Strategy, 1005
Risk-Based Bridge Management, 1076
Scoping Out Scour, 1220
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978
The Silver Bridge Collapse Recounted, 754

Bridge maintenance
Hassle-Free Bridge Rehab, 1270
Microcomputer Bridge Management System, 1031
Risk-Based Bridge Management, 1076
Short-Span Bridge Solutions, 1255

Bridge tests
Tests and Ratings of Short-Span Steel Bridges, 928

Bridges
Collaboration in the Engineering Classroom, 791
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985
Landmark American Bridges, 1367
Merging Laboratory and Field Data in Bridge Scour, 564
Microcomputer Bridge Management System, 1031
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74
Parallel Connecting Beams for Equivalent Structures, 986
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861
Rigidities of Horizontally Curved, Flat Structures, 948
Risk-Based Bridge Management, 1076
Scoping Out Scour, 1220
Short-Span Bridge Solutions, 1255
Supply-Side Solutions, 1225

Bridges, arch
Arches For A Parkway, 1290
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Seismic Response of and Design Aids for Arch Bridges, 973

Bridges, box girder
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916

Bridges, cable-stayed
Design Projects in Civil Engineering Curriculum, 793
Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918

Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862
The French Composite: A Bridge for Normandy, 1205
Keeping Cables Calm, 1283
Modal Identification of Cable-Stayed Pedestrian Bridge, 997

Bridges, composite
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

Bridges, concrete
Concrete over the Connecticut, 1193
Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858
Nonlinear Finite Element Analysis of RC Slab Bridge, 811
Thermal Actions for Concrete Bridge Design, 938

Bridges, continuous
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875
Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911

Bridges, girder
Impact Studies of Multigirder Concrete Bridges, 942
Moments in Deck Slabs Due to Cantilever Loads, 907
Probability-Based Bridge Inspection Strategy, 1005

Bridges, highway
Effect of Truck Loads on Bridges, 1082
Fatigue Damage to Steel Bridge Diaphragms, 751
Hassle-Free Bridge Rehab, 1270

Bridges, lift
Recycling on the Mississippi, 1207

Bridges, piers
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869
Stability of Riprap at Bridge Piers, 558

Bridges, railroad
Collapse of Ashtabula Bridge on December 29, 1876, 742

Bridges, spans
Bridge to the Future, 1189
Response of Long-Span Soil-Metal Structures, 836

Bridges, steel
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814
Probability-Based Bridge Inspection Strategy, 1005
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978
Tests and Ratings of Short-Span Steel Bridges, 928
XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Bridges, suspension
Effect of Sidewalk Vents on Bridge Response to Wind, 832
Rating and Preliminary Analysis of Suspension Bridges, 956
The Silver Bridge Collapse Recounted, 754
Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Bridges, truss
Closing the Loop, 1259

Bridges, wooden
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859

Brittle failure
Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484

Bubbles
Energetic Bubble Plumes in Arbitrary Stratification, 532
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367
Oxygen Transfer in Bubbly Turbulent Shear Flow, 493
Self-Aerated Flows on Chutes and Spillways, 506

Buckling
Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Buckling Fire Endurance of Steel Columns, 904
Buckling of Elliptical Plates Under Uniform Pressure, 999
Complete Stiffness Matrices for Buckling Analysis of Frames, 161
Distortional Buckling Curves for Composite Beams, 927
Effect of Member Snap on Space Truss Collapse, 199
Effect of Shear on Simple Buckling Problem, 213
Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201
Experimental Study of Behavior of Composite Space Trusses, 848
False Paradox of Torsional Buckling, 1013
Finite Element Method for Buckling Analysis of Plate Structures, 864
Flexural Buckling of Pretwisted Columns, 224
High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Joint Effects on Behavior of Transmission Towers, 845
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262
Local Buckling of FRP Beams and Columns, 720
Lower Bounds for Critical Buckling Load Using Matrix Norms, 212
Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148
New Approach to Buckling of Imperfection-Sensitive Structures, 198
Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41

Optimum Design of Three-Dimensional Framework Structures, 846
Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264
Postbuckling and Hysteresis Models of Open-Web Girders, 853
Propagating Instabilities in Long Shallow Panels, 181
Requirements for Lateral Bracing of Columns with Two Spans, 970
Response of Long-Span Soil-Metal Structures, 836
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172
Simple Method to Stabilize I-Beams Against Lateral Buckling, 966
Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905
Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279
Stability of Nonsymmetric Cross-Bracing Systems, 815
Stability of Pitched-Roof Frames in National Building Codes, 980
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193
Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171
Tests of Profiled Steel Decks with V-Stiffeners, 936
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Budget estimates

Forecasting Final Cost and Budget of Construction Projects, 79

Budgets

Infrastructure-Management-System Analysis, 1090

Buffeting

Bridge Buffeting by Skew Winds in Erection Stages, 163

Building codes

Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330
Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Expansion Potential According to *Uniform Building Code*, 442
Questioning Composites, 1195
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977
Stability of Pitched-Roof Frames in National Building Codes, 980
Structural Engineering in Natural Hazards Mitigation, 1386

Building design

Colorado Dome, 1246
The Copper-Clad Library, 1284
Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828
Japanese Building Design and Construction Technologies, 798
Octree Subdivision of Building Elements, 75

Building frames

Analysis of Building Frames, 831
Seismic Response of R/C Frames with Irregular Profiles, 1

Buildings

Analysis of Multiple-Bay Frames Using Continuum Model, 834
Checklist of Critical Success Factors for Building Projects, 679
Computation of Wind Pressures on L-Shaped Buildings, 239
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Cracking in Exterior Insulation and Finish Systems, 737
Cyclonic Damage to Structural Steel Skeleton During Erection, 741
Dynamic Along-Wind Response of Buildings: Comparative Study, 891
Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753
Experimental Study of Timber Trusses and Joints, 878
Knowledge-Based Design of Project-Procurement Process, 57
Lifelike Model, 1241
Octree Subdivision of Building Elements, 75
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Robot for Interior-Finishing Works, 9
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947

Buildings, nonresidential

All Dressed Up, 1272

Buildings, office

Commercial Growth Management Techniques in San Francisco, 1097

Buoyant jets

Asymptotic Solutions and Behavior of Outfall Flumes, 524
Detachment of Buoyant Surface Jets Discharged on Slope, 545
Round Buoyant Jet Entering Shallow Water in Motion, 575

Buried pipes

Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959

Frost Heave Induced Mechanics of Buried Pipelines, 488
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Pipeline Damage Due to Wave Propagation, 463

Buses
Optimal Dimensions of Bus Service Zones, 1065

Business administration
Making the Leap, 1247
Win-Win Negotiating: A Professional's Playbook, 1394

Business districts
Commercial Growth Management Techniques in San Francisco, 1097

Cables
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163
Cable-Stayed Convention Center, 1201
Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918
Fast-Track Stadium, 1204
Model Study of a Cable-Moored Conical Platform, 44
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190
Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173
Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Cadmium
Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Caissons
Classification of Breaking Wave Loads on Vertical Structures, 1169

Calcareous sand
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Calcareous soils
Triaxial Testing of Naturally Cemented Carbonate Soil, 456

Calcium magnesium acetate
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084

Calibration
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360
Models of Viscoelasticity with Complex-Order Derivatives, 234
Radar-Assisted Real-Time Flood Forecasting, 1103
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079

California
Assessing Potential for Superhub Airport for California, 1071
Geosynthetics Conquer the Landfill Law, 1301
Keller Canyon Fills a Need, 1280

California bearing ratio
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Cameras
Phototriangulation Using CCD Camera in Close-Range Environment, 1017

Canada
Analyses of Canadian Air Travel Demands, 1048
Canada's Environmental Review of the North American Free Trade Agreement, 785
Coastlines of Canada, 1337

Canals
Cal Poly Model Canal, 631
Comprehensive Open-Channel Expansion Transition Design, 580
Critical Depth Equations for Irrigation Canals, 608
Description and Evaluation of Program CANAL, 635
Description and Evaluation of Program: CARIMA, 634
Description and Evaluation of Program: DUFLOW, 636
Description and Evaluation of Program MODIS, 637
Description and Evaluation of Program USM, 633
Field Data for Verifying Canal Unsteady Flow Models, 632
Hydraulic Design of Flume Aqueducts, 509
Informed Use and Potential Pitfalls of Canal Models, 630
Irrrigation–Canal—Simulation Model Usage, 627
Measuring Water in Trapezoidal Canals, 592
Numerical Methods Used to Model Unsteady Canal Flow, 628
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605
Unique Problems in Modeling Irrigation Canals, 629
Unsteady-Flow Modeling of Irrigation Canals, 626
Water Management in Arranged-Demand Canal, 598

Cantilevers
Behavior of Cantilever Retaining Walls, 479
Driving Under a Construction Site, 1224
Possible Ranges of End Slope for Cantilever Beams, 185

Capacity
Microcomputer Model for Design and Location of Runway Exits, 1053
Risk and Capacity Impacts of ATC Separation Rules, 1074

Capital
Foreign Investment in Latin America: A Second Look, 1317

Careers
Adult-Development Perspective for Managing Professionals, 680
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764
Civil Engineering Evolution, 757
Digger's Decline: A Fable for Civil Engineers, 792
Model of Career Choice for Craftworkers, 87

Monitoring Well-Being of Civil Engineering Profession, 758
Testing and Counseling in Assisting Students in Career Selection, 766

Cargo handling
Machine-Friendly Facility, 1202

Case reports
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740
Developing Coastal Engineers, 769
Estimation of Flood Frequencies for Ungaged Catchments, 561
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142
Failure as Source of Engineering Judgment: Case of John Roebling, 736
Fly Ash for Soil Improvement, 1356
Including Failure Case Studies in Civil Engineering Courses, 749
Local Water, Local Control, 1253
Shotcrete for Underground Support V, 1381
Small Dam Rehabs, 1192

Cast-in-place structures
Driving Under a Construction Site, 1224

Catchments
Estimation of Flood Frequencies for Ungaged Catchments, 561

Cavities
Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191
Transient Infiltration from Cavities. I: Theory, 612
Transient Infiltration from Cavities. II: Analysis and Application, 613
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Cement paste
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Cementation
Triaxial Testing of Naturally Cemented Carbonate Soil, 456

Cements
Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Manufacture of Cement from Sewage Sludge, 697
Measurement of Effective Diffusivities in Solidified Wastes, 299
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711

Center-pivot irrigation
Hydraulics of Center-Pivot Laterals, 621

Centrifuge model
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Project Velacs—Control Test Results, 452

Centroid
Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72

Change orders
Application of Computer Simulation in Resolving Construction Disputes, 102

Channel bends
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539

Channel design
Report on Ship Channel Design, 1380
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548

Channel flow
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195

Channels, waterways
Characteristics of B-Jump with Different Toe Locations, 549
Computer Modeling of Side-Flow Weirs, 653
Criterion Delineating the Mode of Headcut Migration, 494
Factors Affecting Conveyance in Meandering Compound Flows, 576
Incipient Hydraulic Jump at Channel Junctions, 516
Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195
Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164
Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505
Wave Propagation in Ice-Covered Channels, 546

Chaos
Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240

Characteristics
Investigation of Phosphate Mining Waste for Construction Materials, 714

Charts
Design Charts for Double-Walled Cofferdams, 386

Chemical equilibrium
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Chemical oxygen demand
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304

Chemical reactions
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740
Geochemical Factors Affecting Trace Element Mobility, 645

Chemical treatment
Invasion of the Zebra Mussels, 1233

Chemicals
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345

Chesapeake Bay
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361
Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Chicago
Ups and Downs in Chicago, 1302

Chlorides
Field Evaluation of Preformed Membranes, 1047
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354

Chlorinated hydrocarbon pesticides
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341

Chlorine
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Hazmat Transport Risks: Societal and Individual Perspectives, 1039
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319

Chromatographic analysis
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Circulation
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520

Cisterns
Effects of Wastewater Composition on Stability of UASB, 358
Novel Technique for Evaluation of Advanced Anaerobic Reactors, 359

Civil engineering
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774
Bachelor of Civil Technology and Civil Engineering Programs, 768
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764
Civil Engineering for the Community, 1331
Essential Tools of Total Quality Management, 684
Failure of Engineered Facilities: Academia Responds to the Challenge, 745
Including Failure Case Studies in Civil Engineering Courses, 749
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Sharing the Pride, 767
Strategy for Passing the Civil P.E. Exam, 788
Too Many Failures: What Can Education Do?, 744
What Do You Mean by That?, 1226

Civil engineers
Civil Engineering Evolution, 757
Contemporary Model of Civil Engineering Failures, 771
Developing Competent Civil Engineering Writers, 765
Facilitating Sustainable Development: Is Our Approach Correct?, 779
Monitoring Well-Being of Civil Engineering Profession, 758
Win-Win Negotiating: A Professional's Playbook, 1394

Claims
Analysis of Highway Project Construction Claims, 748
Certificate of Merit in Civil Litigation, 789
"Claimsmanship": Current Perspective, 110
More Than an Underground Success, 1299
Trends in Construction Contractor Financial Data, 134

Clamps
Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Classification
Primitive-Based Classification of Pavement Cracking Images, 1054

Clay liners
Compacted Clay Liners and Covers for Arid Sites, 387
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402

Clay soils
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346
Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640
Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432

Clay structure
Performance of Historic Adobe Structure, 747

Clays
Anisotropy Studies on Cuboidal Shear Device, 436
Banking on a Bridge, 1219
Cohesion Intercept in Effective Stress-Stability Analysis, 450
Deformation Analysis of Embankments, 448
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377

Estimation of Uplift Capacity of Helical Anchors in Clays, 394
Field Tests of Anchors in Clay. I: Description, 465
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Limitations of Conventional Analysis of Consolidation Settlement, 454
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441
Simulating Seasonal Ground Movement in Unsaturated Clay, 446
Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597
Two-Time Winner, 1300
Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433
Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478

Client relationships
Listening to Research Clients, 803
Marketing Strategies for Engineers, 1370

Climatic changes
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Engineering Hydrology, 1354

Climatology
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123

Closed form solutions
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163
Doubly Symmetric Tube Structures. I: Static Analysis, 919
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825
Gust Buffeting. II: Dynamic Alongwind Response, 826
Half-Plane Crack Under Normal Load: Complete Solution, 281
Settlement of Pile Groups—Practical Approach, 460
Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809
Vertical Earth Loads on Buried Engineered Works, 403

Coagulation
Particle Size and Chemical Effects on Contact Filtration Performance, 331

Coal
Sorption and Desorption of Dyes by Sulfonated Coal, 320

Coastal engineering
Coastal Engineering Considerations in Coastal Zone Management, 1333
Coastal Engineering—1992, 1334
Coastlines of Canada, 1337
Coastlines of the Southern North Sea, 1342
Developing Coastal Engineers, 769
Equilibrium Shoreline Response to Breakwaters, 1187
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523
Professional Issues in Coastal Engineering, 787

Coastal environment
Coastal Engineering—1992, 1334

Coastal management
Beach Nourishment Engineering and Management Considerations, 1329
Coastal Engineering Considerations in Coastal Zone Management, 1333
Coastal Management in Mexico: the Baja California Experience, 1335
Coastal Zone '93, 1336
Coastlines of Canada, 1337
Coastlines of Japan II, 1338
Coastlines of the Black Sea, 1339
Coastlines of the Gulf of Mexico, 1340
Coastlines of the Mediterranean, 1341
Coastlines of the Southern North Sea, 1342
Coastlines of Western Africa, 1343
Deltas of the World, 1347
The Management of Coastal Lagoons and Enclosed Bays, 1368

Coastal processes
Coastal Engineering—1992, 1334
Longshore Transmission of Reflected Waves, 1181

Coastal structures
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186
Longshore Transmission of Reflected Waves, 1181

Codes
Airport Towers: A New Generation, 1296
Bolted Connection Design Values Based on European Yield Model, 929
Comparison of Construction Safety Codes in United States and Honduras, 115
Composite Construction in Steel and Concrete II, 1345
Infratechnologies: Tools For Innovation, 1297
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912
Reliability-Based Design of Wood Members Subject to Ponding, 994
What's In It for Me?, 1310

Coefficients
Dependence of Coefficient *K* on Grain Size, 1180

Cofferdams
Design Charts for Double-Walled Cofferdams, 386

Cohesion
Cohesion Intercept in Effective Stress-Stability Analysis, 450
Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Cohesionless sediment
Effect of Bed Surface Structure on Spherical Particle Stability, 1160

Cohesionless soils
Stress-History–Based Model for G^e of Cohesionless Soils, 443

Cohesive sediment
Rotating Circular Flume, 536

Cohesive soils
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418
Criterion Delineating the Mode of Headcut Migration, 494

Cold regions
Cold Region Logistics Planning and Management, 43
New Course in Management of Cold Regions Construction, 50

Cold weather construction
New Course in Management of Cold Regions Construction, 50
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Cold-formed steel
Behavior of Arc Spot Weld Connections in Tension, 930
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841
Composite Profiled Beams, 866
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905
Tests of Profiled Steel Decks with V-Stiffeners, 936
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Coliform bacteria
Slow Sand Filtration of Secondary Effluent, 338

Coliforms
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329

Collapse
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910
The Silver Bridge Collapse Recounted, 754
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250

Collapse load
Analysis of Delayed Failure in Sloping Excavations, 455
Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911
Stability and Strength of Rigid and Semirigid Plane Frameworks, 28

Collapsible soils
Evaluation of In-Place Wetting Using Soil Suction Measurements, 428
Plate-Load Tests of Collapsible Soils, 411

Colorado
Colorado Dome, 1246
The Denver Airport: Managing a Megaproject, 1236
Pioneer Highway, 1250
Traversing the Terminals, 1269

Columns
After the Blast, 1230
Blind Bolting W-Shape Beams to HSS Columns, 1002
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Effect of Shear on Simple Buckling Problem, 213
Flexural Buckling of Pretwisted Columns, 224
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
Parametrically Induced Vibration in Concrete Columns, 218
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000
Requirements for Lateral Bracing of Columns with Two Spans, 970
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905
Stress Distribution in Front Columns of High-Rise Buildings, 889
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184
Time-Dependent Shortening of Slender RC Columns, 269
Uniaxial Bending of Columns, 873
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Columns, restrained
Slenderness of Columns in Braced Frames, 998

Columns, supports
Approximate Moment-Curvature Relationships for Slender Columns, 868
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869

Communication
CRANIUM: Device for Improving Crane Productivity and Safety, 82
The Denver Airport: Managing a Megaproject, 1236
Dynamic Communication for Engineers, 1353
Listening to Research Clients, 803
Quality Improvement Experiences in E/A Firm, 682
Trick Plays and Traps, 1249
What Do You Mean by That?, 1226

Communication skills
Civil Engineering for the Community, 1331
Developing Competent Civil Engineering Writers, 765

Dynamic Communication for Engineers, 1353
Skills Required of Effective Project Managers, 676
Trick Plays and Traps, 1249
What Do You Mean by That?, 1226

Communication systems
Lost & Found: Comeback at the IDB, 1316

Community development
Design Projects in Civil Engineering Curriculum, 793
Techniques for Coordinating and Managing Growth, 1093

Community goals
Techniques for Coordinating and Managing Growth, 1093

Community planning
Civil Engineering for the Community, 1331
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
Techniques for Coordinating and Managing Growth, 1093

Compacted soils
Conical Test Load Measuring Compressibility, 435
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390

Compaction
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Construction and Performance of Shoulders Using Unrap Base, 719
Unwanted Legacy of Asphalt Pavement Compaction, 1086

Compaction equipment
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706
Unwanted Legacy of Asphalt Pavement Compaction, 1086

Comparative studies
Comparative Study of Frequencies for Plates Carrying Mass, 202
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179
Comparison of Construction Safety Codes in United States and Honduras, 115
Comparison of Two Simulation Methodologies in Construction, 116
Dynamic Along-Wind Response of Buildings: Comparative Study, 891
Finite Element Analyses of HDR-4 Excavation, 13
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155
Reservoir-System Simulation and Optimization Models, 1129

Compatibility
Meshing Computer Technologies, 1194

Competition
Can the U.S. Compete?, 1315
Deliverance, 1200
Environmental Consulting Grows Up, 1211
The Financing Fray, 1320
Inside the System: The Japanese Construction Company, 1313
Making the Leap, 1247
Process-Based Research to Meet the International Challenge, 106
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130
World Bank Update, 1318

Competitive bidding
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760
Average-Bid Method—Competitive Bidding Strategy, 89
DBID: Analogy-Based DSS for Bidding in Construction, 109
Deliverance, 1200

Composite beams
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Local Buckling of FRP Beams and Columns, 720
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984

Composite columns
Local Buckling of FRP Beams and Columns, 720

Composite materials
Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182
Damage Detection in Composite Materials Using Identification Techniques, 39
Delamination Characteristics around Hole in Laminates with Softening Strip, 29
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210
Improved Method for Determining Interfacial Stresses in Composites, 21
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Plastic Potential, 1265
Plasticity Model for Transversely Isotropic Materials, 192
Plastics Composites for 21st Century Construction, 1377
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711
Questioning Composites, 1195
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330

Composite structures
Behavior of Composite Timber-Concrete Floors, 982
Bond and Slip of FRP Rebars in Concrete, 698
Bridge to the Future, 1189
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Composite Construction in Steel and Concrete II, 1345
Composite Profiled Beams, 866
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Distortional Buckling Curves for Composite Beams, 927
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Experimental Study of Behavior of Composite Space Trusses, 848
The French Composite: A Bridge for Normandy, 1205
Local Buckling of FRP Beams and Columns, 720
Minimum-Weight Design of Continuous Composite Girders, 879
Object-Oriented Finite Element Analysis Using EER Model, 962
Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41
Plastic Piling, 1227
Seismic Design and Performance of Composite Coupled Walls, 992
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935

Compressibility
Conical Test Load Measuring Compressibility, 435
Stress-History–Based Model for G^e of Cohesionless Soils, 443
Tropical Clays. II: Engineering Behavior, 427

Compression
Compression Response of Cracked Reinforced Concrete, 1009
Damage Model for Concrete Using Bounding Surface Concept, 260
Dynamic Compaction of Saturated Porous Columns, 241
Eccentrically Connected Cleat Plates in Compression, 849
Effective Width of Locally Buckled Plates in Compression and Bending, 882
Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289
Tensile and Compressive Shaft Capacity of Piles in Sand, 489
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Compression tests
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
One-Dimensional High-Pressure Compression of Granular Media, 374

Compressive strength
Characterization of Polyester Polymer and Polymer Concrete, 701
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Manufacture of Cement from Sewage Sludge, 697
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000

Compressors
Pulsation Errors in Compressible Flow Measurement, 323

Computation
Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72
Dynamic Along-Wind Response of Buildings: Comparative Study, 891
Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
Multiple-Zone Potential Solution around Wing-Body Configurations, 37
Numerical Modeling of Flood Propagation through System of Reservoirs, 514
Stability and Strength of Rigid and Semirigid Plane Frameworks, 28
Unified Design of Horizontal Circular Curves, 1033

Computer aided drafting (CAD)
Integration of Engineering, Design, and Construction, 14
Meshing Computer Technologies, 1194
Model-Based Planning: Scaled-Up Construction Application, 62
Runway Rehab: A Case for CADD, 1242
Subsurface Characterization With Solid Models, 483

Computer aided instruction
Expert System Based Training for Emergency Management, 51

Computer analysis
Analysis of Building Frames, 831
High-Performance Computing in Structural Mechanics and Engineering, 32

Computer applications
Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72
Advanced Construction Technology System—ACTS, 98
Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136
Computer-Aided Planning for Heavy Lifts, 111
Computer-Automated Design of Semirigid Steel Frameworks, 906

Computer-Based Environment for Wastewater Treatment Plant Design, 356
Computer-Integrated Design Drawings and Construction Project Plans, 126
Computerized Daily Site Reporting, 104
Computer-Use Factors in Transportation Engineering Project Management, 76
Computing in Civil and Building Engineering, 1346
Construction Decision Support System for Delay Analysis, 95
Cost, Schedule, and Time Variances and Integration, 96
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
Effective Management in Computerized SCADA System, 668
Experiencing Computer Integrated Construction, 99
Expert System Based Training for Emergency Management, 51
Friction-Controllable Sliding Isolation System, 259
High-Performance Computing in Structural Mechanics and Engineering, 32
Information Management Power Station Construction at Stanwell, 667
Integration of Engineering, Design, and Construction, 14
Japanese Building Design and Construction Technologies, 798
Microcomputers in Management of Construction Operations, 105
Microcomputers in Transportation, 1372
Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896
Multiple-Zone Potential Solution around Wing-Body Configurations, 37
Multitask Motion Planning for Material Handling in Construction, 92
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Potential Applications of Geographic Information Systems to Construction Industry, 85
Probabilistic Assessment of Pile Interference, 405
Spatial Data Models for Managing Subsurface Data, 65
STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311
Systematic Automated Management Exception Reporting, 86

Computer equipment

Speech-Based Data-Entry Systems for Construction, 73

Computer models

Computer Modeling of Side-Flow Weirs, 653
Computer-Aided Liability, 1239
Description and Evaluation of Program CANAL, 635
Design and Construction of Urban Stormwater Management Systems, 1348
Integration of Engineering, Design, and Construction, 14
Measuring Water in Trapezoidal Canals, 592
Modeling Operational Activities in Object-Oriented Simulation, 56
Numerical Methods Used to Model Unsteady Canal Flow, 628
Reservoir-System Simulation and Optimization Models, 1129
Third-Generation Wind-Wave Model for Use on Personal Computers, 1147

Computer programming languages

Knowledge Representation and Processing in Relational Data Base, 64

Computer programs

Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Description and Evaluation of Program: CARIMA, 634
Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74
Probabilistic Assessment of Pile Interference, 405
Use of Structural Analysis Programs in Consulting, 802
Wave Equation Parameters from Driven-Rod Test, 440

Computer software

Meshing Computer Technologies, 1194
Microcomputers in Management of Construction Operations, 105
Nonlinear Finite Element Analysis of RC Slab Bridge, 811
Project Information Management System—Another Approach, 665
Standardizing Scheduling Data Exchange, 94

Computerized control systems

Machine-Friendly Facility, 1202

Computerized design

Computer-Aided Liability, 1239
Computer-Automated Design of Reinforced Concrete Frameworks, 922
Computer-Based Environment for Wastewater Treatment Plant Design, 356
Computer-Integrated Design Drawings and Construction Project Plans, 126
Integration of Engineering, Design, and Construction, 14
Landfill on Screen, 1244
Meshing Computer Technologies, 1194
Microcomputer Model for Design and Location of Runway Exits, 1053
Model-Based Planning: Scaled-Up Construction Application, 62
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Runway Rehab: A Case for CADD, 1242
XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Computerized scheduling
Computer Scheduling and Construction Specs, 1254

Computerized simulation
Application of Computer Simulation in Resolving Construction Disputes, 102
Description and Evaluation of Program: DUFLOW, 636
Description and Evaluation of Program USM, 633
Lifelike Model, 1241
Simulation Technologies for Planning Heavy Construction Processes, 101

Computers
Computer-Use Factors in Transportation Engineering Project Management, 76
Construction Field Data Acquisition with Pen-Based Computers, 103

Concentrated loads
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Moments in Deck Slabs Due to Cantilever Loads, 907

Concentration
Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541

Concrete
Behavior of Chemically Bonded Anchors, 961
Behavior of Composite Timber-Concrete Floors, 982
Bond and Slip of FRP Rebars in Concrete, 698
Composite Construction in Steel and Concrete II, 1345
Concrete Toughness After 20 Years, 885
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Creep of Mass Concrete at Early Ages, 724
Damage Model for Concrete Using Bounding Surface Concept, 260
Driving Under a Construction Site, 1224
Effects of Aggregate Top Size on Bituminous Concrete, 732
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166
Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188
Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189
Impact Studies of Multigirder Concrete Bridges, 942
Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289
Influence of Surface Finish on Sorptivity on Concrete, 705
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Mathematics of Concrete Scaling, 716
Microbial Ecology of Crown Corrosion in Sewers, 15
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723
Parametrically Induced Vibration in Concrete Columns, 218
Permanent Deformation in Asphalt Concrete, 704
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Scaling Laws in Mechanics of Failure, 258
Seismic-Induced Slip of Concrete Gravity Dams, 812
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935
Structural Response of Full-Scale Concrete Box Culvert, 989
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Concrete aggregates
Rubber-Tire Particles as Concrete Aggregate, 729

Concrete blocks
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Concrete construction
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740
Modeling Human Performance in Reinforced Concrete Beam Construction, 81

Concrete durability
Concrete Toughness After 20 Years, 885
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Concrete pavements
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Concrete placing
Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108

Concrete, precast
Bridge to the Future, 1189
Pittsburgh Goes International, 1190
Short-Span Bridge Solutions, 1255

Concrete, prestressed
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957

Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Multiobjective Optimization of Prestressed Concrete Structures, 851
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984

Concrete properties

Creep of Mass Concrete at Early Ages, 724
Rubber-Tire Particles as Concrete Aggregate, 729

Concrete, reinforced

Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921
Analytical Crack Model for Reinforced-Concrete Structures, 881
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
The Big No-Dig, 1305
Composite Profiled Beams, 866
Compression Response of Cracked Reinforced Concrete, 1009
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Computer-Automated Design of Reinforced Concrete Frameworks, 922
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Cyclic Behavior of Moderately Deep HSC Beams, 951
Direct Analysis of Slender Columns with P-Delta Effects, 855
Effect of Slab on Inelastic Response of R/C Buildings, 883
Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200
Failure Modes of Low-Rise Shear Walls, 143
Finite Element Analysis of Reinforced Concrete Structures II, 1355
Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995
Inelastic Behavior of Hyperbolic Cooling Tower, 933
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
Modeling Human Performance in Reinforced Concrete Beam Construction, 81
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Nonlinear Analysis of Reinforced-Concrete Shells, 1001
Nonlinear Finite Element Analysis of RC Slab Bridge, 811
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Plastics Composites for 21st Century Construction, 1377
Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964
RC Flat Slab–Column Subassemblages Under Lateral Loading, 915
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000
Seismic Design and Performance of Composite Coupled Walls, 992
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910
Seismic Response of R/C Frames with Irregular Profiles, 1
Seismic Response of Steel Beams Coupling Concrete Walls, 1010
Shear Behavior of RC Structural Walls, 847
Shear Strength of Reinforced Concrete Deep Beams, 937
Strength Design for Reinforced-Concrete Hydraulic Structures, 1385
Time-Dependent Shortening of Slender RC Columns, 269
Uniaxial Bending of Columns, 873
Utilization of Industrial By-Products for Construction Materials, 1391

Concrete slabs

Analysis of Concave Curling in Concrete Slabs, 1068
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725
Experimental Study of Behavior of Composite Space Trusses, 848
RC Flat Slab–Column Subassemblages Under Lateral Loading, 915
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058

Concrete structures

Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Concrete over the Connecticut, 1193
Effect of Slab on Inelastic Response of R/C Buildings, 883
Expert System for Optimum Design of Concrete Structures, 59
Innovation in Repair Techniques of Concrete Structures, 1366
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250

Stochastic Drying and Creep Effects in Concrete Structures, 822

Concrete tests

New Course in Management of Cold Regions Construction, 50

Cone penetration

Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491

Cone penetration tests

Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471

Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401

Cone penetrometers

Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470

Conflict

Application of Computer Simulation in Resolving Construction Disputes, 102

Engineering: Environmental vs. Developmental Goals, 1218

Finding Your Way through Conflict, 671

Getting Along: The Geotech and the CM, 1256

More Than an Underground Success, 1299

Win-Win Negotiating: A Professional's Playbook, 1394

Connecticut

Concrete over the Connecticut, 1193

Connections

Behavior and Design of Steel Single Plate Shear Connections, 944

Bolted Connection Design Values Based on European Yield Model, 929

Colorado Dome, 1246

Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006

Eccentric Connection Design: Geometric Approach, 839

LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976

RC Flat Slab–Column Subassemblages Under Lateral Loading, 915

Seismic Performance of Joist-Pocket Connections. I: Modeling, 974

Seismic Performance of Joist-Pocket Connections. II: Application, 975

Sequential Coupling: New Structural Connection for Seismic Control, 816

Simple Friction Model for Scissor-Type Mobile Structures, 175

X-Bracing Anchorage Connection, 996

Connections, bolted

Blind Bolting W-Shape Beams to HSS Columns, 1002

Connections, welded

Behavior of Arc Spot Weld Connections in Tension, 930

Connectors, mechanical

Behavior of Composite Timber-Concrete Floors, 982

Conservation

Beach Nourishment Engineering and Management Considerations, 1329

Canada's Environmental Review of the North American Free Trade Agreement, 785

Coastal Engineering Considerations in Coastal Zone Management, 1333

Coastal Management in Mexico: the Baja California Experience, 1335

Coastal Zone '93, 1336

Coastlines of Canada, 1337

Coastlines of Japan II, 1338

Coastlines of the Black Sea, 1339

Coastlines of the Gulf of Mexico, 1340

Coastlines of the Mediterranean, 1341

Coastlines of the Southern North Sea, 1342

Coastlines of Western Africa, 1343

Deltas of the World, 1347

Engineering Sustainable Development, 1279

The Management of Coastal Lagoons and Enclosed Bays, 1368

Water Management in the '90s: A Time for Innovation, 1392

Consolidation

Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470

Anisotropy Studies on Cuboidal Shear Device, 436

Conical Test Load Measuring Compressibility, 435

Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706

Limitations of Conventional Analysis of Consolidation Settlement, 454

Project Velacs—Control Test Results, 452

Consolidation, soils

Piled Rafts in Swelling or Consolidating Soils, 397

Structural Stiffness Influence on Soil Consolidation, 383

Constitutive equations

Effect of Shear on Simple Buckling Problem, 213

Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722

Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723

Constitutive models

Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417

Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418

Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165

Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166

Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188

Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189

Nonlinear Analysis of Reinforced-Concrete Shells, 1001

Numerical Modeling of Transient Creep in Polycrystalline Ice, 268

Plasticity Model for Transversely Isotropic Materials, 192
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235

Constitutive relations
Analytical Model of Viscoelastic Fluid Dampers, 993
Compression Response of Cracked Reinforced Concrete, 1009

Constraints
Optimum Design of Three-Dimensional Framework Structures, 846

Constructibility
Comparison of Two Corporate Constructability Programs, 129
Documented Constructability Savings for Petrochemical-Facility Expansion, 735
Fossil Power Plant Constructability: Applications of CII Concepts, 139
Project-Level Model Process for Implementing Constructability, 132
Quality Function Deployment—System for Meeting Customers' Needs, 112

Construction
Advanced Construction Technology System—ACTS, 98
Analysis of Back Injuries in Construction, 118
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760
Applying Total Quality Management to Design and Construction, 686
Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330
Checklist of Critical Success Factors for Building Projects, 679
Comparison of Construction Safety Codes in United States and Honduras, 115
Comparison of Two Simulation Methodologies in Construction, 116
Compendium of Pumped Storage Plants in the United States, 1344
Computer Scheduling and Construction Specs, 1254
Computing in Civil and Building Engineering, 1346
Construction and Performance of Shoulders Using Unrap Base, 719
Construction Field Data Acquisition with Pen-Based Computers, 103
Cyclonic Damage to Structural Steel Skeleton During Erection, 741
DBID: Analogy-Based DSS for Bidding in Construction, 109
Documented Constructability Savings for Petrochemical-Facility Expansion, 735
Essential Tools of Total Quality Management, 684
Human Factors in Introducing On-Site Construction Automation, 131
Importance of Teaching Construction Contract Specifications, 772
Information Management Power Station Construction at Stanwell, 667
Infrastructure Construction: Effect of Social and Environmental Regulations, 790
Knowledge-Based Design of Project-Procurement Process, 57
Masonry Productivity Forecasting Model, 91
Modeling Operational Activities in Object-Oriented Simulation, 56
Need for Specification Format that Accommodates Engineered Projects, 128
Nondeterministic Networking Methods, 83
Position-Force Adaptive Control for Construction Robots, 27
Potential Applications of Geographic Information Systems to Construction Industry, 85
Pricing Construction Risk: Fuzzy Set Application, 127
Process-Based Research to Meet the International Challenge, 106
Project-Level Model Process for Implementing Constructability, 132
Prototype Robotic Masonry System, 17
Quality Assurance for Thermal Power Project Construction in India, 739
Resource-Oriented Modeling and Simulation in Construction, 117
Robot for Interior-Finishing Works, 9
Second Roebling Lecture 1991, 80
Short-Span Bridge Solutions, 1255
Simulation Technologies for Planning Heavy Construction Processes, 101
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383
Standardizing Scheduling Data Exchange, 94
Taming the Urban Underground, 1206
Technology in Marine Construction Firms, 90
Utilization of Industrial By-Products for Construction Materials, 1391

Construction costs
Application of Computer Simulation in Resolving Construction Disputes, 102
Construction Cost Factors in Nigeria, 124
The Copper-Clad Library, 1284
Forecasting Final Cost and Budget of Construction Projects, 79
Probabilistic Cost Estimating with Subjective Correlations, 84
Scheduling of Repetitive Projects with Cost Optimization, 123

Construction equipment
Bored Tunneling for Singapore Metro, 7
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Dynamic Damping of Payload Motion for Cranes, 120
Haul-Unit Performance, 121
Lunar-Base Construction Equipment and Methods Evaluation, 30

Construction industry
Analyzing Competitive Position in the Construction Market of Eastern Europe, 664

Average-Bid Method—Competitive Bidding Strategy, 89
Builders as Sources of Construction Innovation, 113
Computer-Integrated Design Drawings and Construction Project Plans, 126
Effective Total Quality Management (TQM) Process, 693
Employee Involvement in Engineering and Construction, 675
Experiencing Computer Integrated Construction, 99
Implementing TQM in Engineering and Construction, 695
Inside the System: The Japanese Construction Company, 1313
Japanese Building Design and Construction Technologies, 798
Managing Implementation of Change, 687
Model of Career Choice for Craftworkers, 87
Partnering-Project Performance in U.S. Army Corps of Engineers, 691
Quality Function Deployment—System for Meeting Customers' Needs, 112
Short-Term Goal Setting for Construction, 119
South Africa at the Crossroads, 1323
Systematic Automated Management Exception Reporting, 86
Total Quality Management at Construction Jobsites, 688
TQM: A View from The Playing Field, 689
What's In It for Me?, 1310

Construction management

All Dressed Up, 1272
Application of Computer Simulation in Resolving Construction Disputes, 102
"Claimsmanship": Current Perspective, 110
Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108
Construction Decision Support System for Delay Analysis, 95
Employee Involvement in Engineering and Construction, 675
Experiencing Computer Integrated Construction, 99
Fossil Power Plant Constructability: Applications of CII Concepts, 139
Getting Along: The Geotech and the CM, 1256
Hassle-Free Bridge Rehab, 1270
Haunted by the Past, 1277
Microcomputers in Management of Construction Operations, 105
Model-Based Planning: Scaled-Up Construction Application, 62
New Course in Management of Cold Regions Construction, 50
New Generation of Planning Structures, 93
Octree Subdivision of Building Elements, 75
Prototype Integrated Cost and Schedule Control System, 61
Quality Assurance for Thermal Power Project Construction in India, 739
Spotting Specs Offenders, 1209
Taking the Pain out of the Punch List, 1268
TQM: A View from The Playing Field, 689

Construction materials

Investigation of Phosphate Mining Waste for Construction Materials, 714
Multitask Motion Planning for Material Handling in Construction, 92
Plastic Potential, 1265
Questioning Composites, 1195

Construction methods

The Big No-Dig, 1305
Bored Tunneling for Singapore Metro, 7
Builders as Sources of Construction Innovation, 113
Cable-Stayed Convention Center, 1201
Comparison of Two Simulation Methodologies in Construction, 116
Fast-Track Stadium, 1204
Fossil Power Plant Constructability: Applications of CII Concepts, 139
The French Composite: A Bridge for Normandy, 1205
Infratechnologies: Tools For Innovation, 1297
Interaction Between Subcycles: One Key to Improved Methods, 125
Knowledge-Based Approach to Modular Construction Decision Support, 88
Lunar-Base Construction Equipment and Methods Evaluation, 30
Metric Design: It's Real, 1248
The Mightiest of Them All: Memories of Grand Coulee Dam, 1373
New Generation of Planning Structures, 93
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Process-Based Research to Meet the International Challenge, 106
Simulation Technologies for Planning Heavy Construction Processes, 101
Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870
Supply-Side Solutions, 1225
Technology in Marine Construction Firms, 90
Trenchless Track Record, 1274
Ups and Downs in Chicago, 1302

Construction planning

Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108
Integration of Engineering, Design, and Construction, 14
Interactive Dynamic Layout Planning, 97
Prebid and Preconstruction Planning Process, 107

Construction site accidents

Haunted by the Past, 1277
Performance of Utility-Trench Shoring: Case Study, 734

Construction sites

Computerized Daily Site Reporting, 104
Construction Field Data Acquisition with Pen-Based Computers, 103
Interactive Dynamic Layout Planning, 97
Microcomputers in Management of Construction Operations, 105
Taming the Urban Underground, 1206

Consultants
Certificate of Merit in Civil Litigation, 789

Consulting engineers
Dutch Globetrotting Pays Off, 1321
Environmental Consulting Grows Up, 1211
Implementing TQM in Consulting Engineering Firm, 685
Marketing Strategies for Engineers, 1370
South Africa at the Crossroads, 1323
Use of Structural Analysis Programs in Consulting, 802

Consumers
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142

Contact pressure
Rational Mechanics of Axial Soil-Pile Interaction, 196
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Containers
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10

Containment
Hydrocarbon Exclusion from Ground Water During Freezing, 344

Containment vessels
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142

Contaminants
Comparison of Physical Transport Processes in Noncohesive River Sediments, 303
Development of Regression Models with Below-Detection Data, 310
Engineering Hydrology, 1354
Fit to Drink, 1232
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319
A Natural Cleanup, 1213
Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11
Water Pipelines: Tackling Toxics, 1238
Water-Table Correction Factors to Applied Gasoline Contamination, 334

Contamination
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985
Geochemical Factors Affecting Trace Element Mobility, 645
Hydrocarbon Exclusion from Ground Water During Freezing, 344
Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350
Sampling Sediment on a Complex Site, 1212
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345
Whose Risk Is It, Anyway?, 1285

Continuing education
Mandatory Continuing Professional Development for Relicensing of Engineers, 796
Meeting Professional Development Needs in Large Consulting Firm, 795

Continuity equation
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967

Continuous beams
Distortional Buckling Curves for Composite Beams, 927

Continuous structures
Response of Continuous Pavements to Moving Dynamic Loads, 253

Continuum hypothesis
Analysis of Multiple-Bay Frames Using Continuum Model, 834

Continuum mechanics
Damage Model for Concrete Using Bounding Surface Concept, 260
Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275

Contours
A Better Grade Of Grade, 1282

Contractors
Analysis of Highway Project Construction Claims, 748
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760
Trends in Construction Contractor Financial Data, 134

Contracts
Analysis of Highway Project Construction Claims, 748
Average-Bid Method—Competitive Bidding Strategy, 89
"Claimsmanship": Current Perspective, 110
The 'Criminalization' of Government Procurement, 1217
Deliverance, 1200
Importance of Teaching Construction Contract Specifications, 772
Partnering: Providing Effective Project Control, 670
Trick Plays and Traps, 1249

Control
Dynamic Damping of Payload Motion for Cranes, 120
GPS—Rapid Solutions for Transportation Management, 1016
Invasion of the Zebra Mussels, 1233
Local Water, Local Control, 1253
Multitask Motion Planning for Material Handling in Construction, 92
Position-Force Adaptive Control for Construction Robots, 27
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305
Reduction of Deep Percolation and Drain Water, 622

Simplified Dynamic Method for Pile-Driving Control, 416

Control equipment

Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Control systems

Application of Hybrid Sliding Isolation System to Buildings, 272

Control Method for On-Demand Operation of Open Channel Flow, 596

Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286

DACL System Dynamic Performance. I: Response-Prediction Analysis, 583

Distributed Air-Traffic Control. I: Theoretical Studies, 1072

Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073

Dynamic Model of Excavator, 25

Egypt's Real Time Water Management, 1304

Forecasting Final Cost and Budget of Construction Projects, 79

Microcomputers in Management of Construction Operations, 105

Motion and Path Control for Robotic Excavation, 16

Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375

Prototype Integrated Cost and Schedule Control System, 61

Quality Function Deployment—System for Meeting Customers' Needs, 112

Sequential Coupling: New Structural Connection for Seismic Control, 816

Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003

Control theory

DACL System Dynamic Performance. I: Response-Prediction Analysis, 583

DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Partnering: Providing Effective Project Control, 670

Convergence

Diagnostic Checking in Stochastic Dynamic Programming, 1131

Movement of Ground Water in Converging Aquifer, 602

Conversion

Metric Design: It's Real, 1248

Cooling

Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137

Cooling systems

Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137

Cooling towers

Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279

Cooperation

Distributed Air-Traffic Control. I: Theoretical Studies, 1072

Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073

Exchanging Wastes, 1287

Holistic Approach to Irrigation Management in Developing Countries, 603

Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781

Inside the System: The Japanese Construction Company, 1313

World Engineering Partnership for Sustainable Development, 783

Coordinates

Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563

Shell Finite Element Formulated on Shell Middle Surface, 266

Using GPS Results in True 3-D Coordinate System, 1014

Coordination

Distributed Air-Traffic Control. I: Theoretical Studies, 1072

Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073

New Paradigm for Coordination in Water Industry, 1138

Copper

The Copper-Clad Library, 1284

Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700

Core

High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204

High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176

Core walls

Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884

Corners

Hybrid Plane Quadrilateral Element with Corner Rotations, 950

Corporate planning

Comparison of Two Corporate Constructability Programs, 129

Correlation analysis

Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497

Probabilistic Cost Estimating with Subjective Correlations, 84

Swelling Soils, 423

Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478

Corrosion

Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740

Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721

Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700

Microbial Ecology of Crown Corrosion in Sewers, 15

Probability-Based Bridge Inspection Strategy, 1005

Corrosion control

Bonded Tendon Debate, 1266

Field Evaluation of Preformed Membranes, 1047

Utilization of Industrial By-Products for Construction Materials, 1391

Corrosion resistance

Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707

Steel Exoskeleton Defines Architecture, 1260

Corrugating

Performance of Deep-Corrugated Steel Box-Type Culvert, 400

Cost analysis

Classification of Maintenance Costs in Scottish Housing Associations, 750

Forecasting Final Cost and Budget of Construction Projects, 79

Implementing TQM in Consulting Engineering Firm, 685

Infrastructure-Management-System Analysis, 1090

Cost control

"Claimsmanship": Current Perspective, 110

Cost, Schedule, and Time Variances and Integration, 96

Forecasting Final Cost and Budget of Construction Projects, 79

Microcomputers in Management of Construction Operations, 105

Prototype Integrated Cost and Schedule Control System, 61

Systematic Automated Management Exception Reporting, 86

Cost effectiveness

Border Advance Using Improved Volume-Balance Model, 654

Cost-Effective Solid-Waste Characterization Methodology, 339

A Dome To Remember, 1292

MSA for VOC Removal, 1216

Plastic Potential, 1265

Cost estimates

Determination of Most Representative Residential Subdivision, 138

High Speed Ground Transportation Systems I: Planning and Engineering, 1362

Probabilistic Cost Estimating with Subjective Correlations, 84

Cost minimization

Computer-Automated Design of Reinforced Concrete Frameworks, 922

Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091

Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164

Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106

Small Dam Rehabs, 1192

Cost savings

Drilling with Direction, 1271

Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371

Costs

Dynamic Programming Optimization of Water-Treatment-Plant Design, 369

Expert System for Optimum Design of Concrete Structures, 59

Cotton

Spatial and Seasonal Variation of Furrow Infiltration, 585

Counseling

Testing and Counseling in Assisting Students in Career Selection, 766

Coupled walls

Lateral Load Distribution in Asymmetrical Tall Building Structures, 863

Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884

Seismic Design and Performance of Composite Coupled Walls, 992

Seismic Response of Steel Beams Coupling Concrete Walls, 1010

Covariance

Probabilistic Cost Estimating with Subjective Correlations, 84

Cover plates

Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978

Coverings

Exchanging Wastes, 1287

High-Tech Landfill Caps, 1235

Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Response of Long-Span Soil-Metal Structures, 836

Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728

Crack initiation

Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Crack propagation

Damage-Evolution Approach to Fatigue Cracking in Pavements, 222

Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228

Digital Image Processing: Techniques and Applications in Civil Engineering, 1351

Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964

Cracking

Crack-Induced Changes in Eigenparameters of Beam Structures, 255

Cracking in Exterior Insulation and Finish Systems, 737

Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733

Damage to Base of LNG Tanks from Blast Loading: Case Study, 746

Fatigue Damage to Steel Bridge Diaphragms, 751

Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640

Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078
Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964
Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952
Unwanted Legacy of Asphalt Pavement Compaction, 1086

Cracks
Analytical Crack Model for Reinforced-Concrete Structures, 881
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
Half-Plane Crack Under Normal Load: Complete Solution, 281
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Notch Sensitivity of First-Year Sea Ice, 226
Primitive-Based Classification of Pavement Cracking Images, 1054
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008

Cranes
Computer-Aided Planning for Heavy Lifts, 111
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Dynamic Damping of Payload Motion for Cranes, 120

Creativity
Managing for Creativity and Innovation in A/E/C Organizations, 690
Nonmonotonic Reasoning in Design, 53

Creep
Buckling Fire Endurance of Steel Columns, 904
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Creep of Mass Concrete at Early Ages, 724
Deformation Analysis of Embankments, 448
Frost Heave Induced Mechanics of Buried Pipelines, 488
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
New Perspectives on Soil Creep, 404
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723
Numerical Modeling of Transient Creep in Polycrystalline Ice, 268
Permanent Deformation in Asphalt Concrete, 704
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Reliability-Based Design of Wood Members Subject to Ponding, 994
Serviceability Design in LRFD for Wood, 1012
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480
Stochastic Drying and Creep Effects in Concrete Structures, 822
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984
Time-Dependent Response of Three-Filament Cord, 197
Time-Dependent Shortening of Slender RC Columns, 269
Viscoelastic Heterogeneous Structures with Variable Structural System, 162
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Critical flow
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593

Critical load
Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201
Lower Bounds for Critical Buckling Load Using Matrix Norms, 212

Critical path method
Computer Scheduling and Construction Specs, 1254
New Generation of Planning Structures, 93
Standardizing Scheduling Data Exchange, 94

Crop production
Furrow Irrigation Erosion Lowers Soil Productivity, 651
Regional Irrigation Water Demand, 644

Crop yield
Agronomic and Environmental Benefits of Water-Table Management, 658
Alfalfa Irrigation During Drought, 661

Crops
Nitrate Leaching under Irrigated Corn, 620
Root Growth Simulation Model Under Specified Environment, 648

Cross sections
Flexural Buckling of Pretwisted Columns, 224
Influence of Cross Section on Wave Scour Around Piles, 1174

Crude oil
Design of a Submarine Oil Pipeline, 1038

Crushing
One-Dimensional High-Pressure Compression of Granular Media, 374

Culverts

Performance of Deep-Corrugated Steel Box-Type Culvert, 400

Riprap Criteria below Pipe Outlet, 504

Short-Span Bridge Solutions, 1255

Structural Response of Full-Scale Concrete Box Culvert, 989

Curing

Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Currents

Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148

Field Measurements of Secondary Currents in Straight Rivers, 526

Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513

Hydraulic Jumps in Sediment-Driven Bottom Currents, 559

Pressure and Set Down for Higher-Order Stokes Waves on Current, 1175

Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Curricula

Bachelor of Civil Technology and Civil Engineering Programs, 768

Developing Competent Civil Engineering Writers, 765

Failure of Engineered Facilities: Academia Responds to the Challenge, 745

Importance of Teaching Construction Contract Specifications, 772

Including Failure Case Studies in Civil Engineering Courses, 749

Meeting Professional Development Needs in Large Consulting Firm, 795

Misesian Assessment of Systems Analysis, 797

Too Many Failures: What Can Education Do?, 744

Curtain walls

Can Engineers Cut Curtain-Wall Failures?, 1291

Ups and Downs in Chicago, 1302

Curvature

Analysis of Concave Curling in Concrete Slabs, 1068

Approximate Moment-Curvature Relationships for Slender Columns, 868

Buckling of Elliptical Plates Under Uniform Pressure, 999

Colorado Dome, 1246

Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227

Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214

Moment-Curvature Relationships for Dented Tubular Sections, 852

Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499

Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869

Rigidities of Horizontally Curved, Flat Structures, 948

Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277

Cyclic loads

Concrete Toughness After 20 Years, 885

Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417

Cyclic Behavior of Moderately Deep HSC Beams, 951

Cyclic Characterization of Liquefiable Sands, 482

Cyclic Response of Axially Loaded Pile Groups, 457

Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006

Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837

Fatigue Behavior of High-Performance Concrete, 703

Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722

Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723

Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235

Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838

Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000

Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480

Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432

Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Cyclic tests

Field Tests of Anchors in Clay. I: Description, 465

Cyclones

Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Cylinders

Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156

Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035

Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283

Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Cylindrical shells

Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237

Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210

Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Dam breaches

Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547

Dam construction

The Mightiest of Them All: Memories of Grand Coulee Dam, 1373

Dam failure
Assessing Cost of Dam Failure, 1105
Incorporating Dam Break Concerns in School Site Selection, 1092
Progressive Failure of Lower San Fernando Dam, 393

Dam foundations
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178

Dam safety
Geotechnical Practice in Dam Rehabilitation, 1359
RCC: Rehab Results, 1261
Small Dam Rehabs, 1192

Dam stability
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Geotechnical Practice in Dam Rehabilitation, 1359

Damage
Damage Model for Concrete Using Bounding Surface Concept, 260
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235

Damage accumulation
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814

Damage assessment
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55
Crack-Induced Changes in Eigenparameters of Beam Structures, 255
Damage Detection in Composite Materials Using Identification Techniques, 39
Neural Networks Trained by Analytically Simulated Damage States, 58

Damage prevention
Unsaturated Soils, 1390

Damping
Analytical Model of Viscoelastic Fluid Dampers, 993
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Dynamic Damping of Payload Motion for Cranes, 120
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918
Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862
Keeping Cables Calm, 1283
Models of Viscoelasticity with Complex-Order Derivatives, 234
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33

Damping ratio
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981

Damping tests
Efficiency of Vibrational Energy Dissipation by Moving Shot, 955

Dams
Dynamic Pressure of Water and Sediment on Rigid Dam, 232
Energy Dissipation on Stepped Spillways, 529
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244
Geotechnical Practice in Dam Rehabilitation, 1359
Incorporating Dam Break Concerns in School Site Selection, 1092
The Mightiest of Them All: Memories of Grand Coulee Dam, 1373
RCC: Rehab Results, 1261
Seismic Retrofitting: Spending to Save, 1203
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384

Dams, arch
Analysis of Arch Dams, 892
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8

Dams, concrete
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8

Dams, earth
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Seismic Remediation for Earth Dams, 1308
Small Dam Rehabs, 1192

Dams, gravity
Seismic-Induced Slip of Concrete Gravity Dams, 812

Data analysis
Alluvial Resistance in Transition Regime, 534
Blunder Detection and Data Snooping in LS and Robust Adjustments, 1023
Data Validation Practices and Risk Assessment, 1214
Field Data for Verifying Canal Unsteady Flow Models, 632
Managing the Data Explosion, 1237
Potential Applications of Geographic Information Systems to Construction Industry, 85

Data banks
Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60

Data collection
Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324
Application of Filtering Techniques for Incident Detection, 1028
Computerized Daily Site Reporting, 104

Construction Field Data Acquisition with Pen-Based Computers, 103
Data Validation Practices and Risk Assessment, 1214
Different Perceptions of Importance of Educational Objectives, 794
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Effective Management in Computerized SCADA System, 668
Enhancing Value of Environmental Data: Data Lineage Reporting, 298
Merging Laboratory and Field Data in Bridge Scour, 564
Motion and Path Control for Robotic Excavation, 16
Prototype Integrated Cost and Schedule Control System, 61
So Much Pavement, So Little Time, 1289

Data collection systems
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360

Data communication
Speech-Based Data-Entry Systems for Construction, 73

Data handling
Meshing Computer Technologies, 1194
Speech-Based Data-Entry Systems for Construction, 73
Standardizing Scheduling Data Exchange, 94

Data processing
Computerized Daily Site Reporting, 104
Enhancing Value of Environmental Data: Data Lineage Reporting, 298
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357

Data processing techniques
Meshing Computer Technologies, 1194

Data systems
Small-Government GIS, 1243

Database management systems
Advanced Construction Technology System—ACTS, 98
Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324
Knowledge Representation and Processing in Relational Data Base, 64
Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60
Managing the Data Explosion, 1237
Microcomputer Bridge Management System, 1031
Potential Applications of Geographic Information Systems to Construction Industry, 85
Spatial Data Models for Managing Subsurface Data, 65
Tying Up The Artery, 1295

Databases
Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043
HyperDocument Model for Design Standards Documentation, 63
KBES for Design of Steel Structural Elements, 52
Water-Distribution GIS from Fragmented and Incomplete Information, 71

Debris
Conical Test Load Measuring Compressibility, 435

Decision making
Decision Analysis of Alternative Highway Alignments, 1049
Modeling School Utilization and Consolidation, 1089
Motion and Path Control for Robotic Excavation, 16
Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Decision support systems
Construction Decision Support System for Delay Analysis, 95
DBID: Analogy-Based DSS for Bidding in Construction, 109
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
Knowledge-Based Approach to Modular Construction Decision Support, 88
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055
Systematic Automated Management Exception Reporting, 86
Toward Spatial Decision Support Systems in Water Resources, 1110
Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Decks
Tests of Profiled Steel Decks with V-Stiffeners, 936

Decomposition
Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301
Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Deep water
Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625

Definitions
Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139

Deflection
Analysis of Laminated Glass Units, 895
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Behavior of Curtailed Wall-Frame Structures, 965
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214
Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057

Possible Ranges of End Slope for Cantilever Beams, 185
Rating and Preliminary Analysis of Suspension Bridges, 956
Serviceability Design in LRFD for Wood, 1012
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Deformation
Analysis of Arch Dams, 892
Analysis of Deep Excavation in Boston, 378
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Deformation Analysis of Embankments, 448
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228
Doubly Symmetric Tube Structures. I: Static Analysis, 919
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920
Effect of Member Snap on Space Truss Collapse, 199
Effects of Aggregate Top Size on Bituminous Concrete, 732
Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201
Failure Modes of Low-Rise Shear Walls, 143
Finite Element Analyses of HDR-4 Excavation, 13
Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148
Observations on Higher-Order Beam Theory, 42
Permanent Deformation in Asphalt Concrete, 704
Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223
Progressive Failure of Lower San Fernando Dam, 393
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421
Simulating Seasonal Ground Movement in Unsaturated Clay, 446
Structural and Orbital Conditions on Response of Large Space Structures, 23
Vehicle Impact Simulation, 1067

Degradation
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Ranking PVC Roofing Membranes Using Thermal Analysis, 702
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354

Degrees of freedom
Hybrid Plane Quadrilateral Element with Corner Rotations, 950
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291
Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Deicing
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084

Delaminating
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Delamination Effect on Flutter of Homogeneous Laminated Plates, 34
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728

Delay time
"Claimsmanship": Current Perspective, 110
Construction Decision Support System for Delay Analysis, 95
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081

Delphi method
Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042

Deltas
Deltas of the World, 1347

Densification
Harry Seed, Liquefaction & the Gravel Drain, 1303

Density
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706
Triaxial Testing of Naturally Cemented Carbonate Soil, 456

Deposition
Role of Suspension Polydispersivity in Granular Media Filtration, 308

Depth
Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495
Critical Depth Equations for Irrigation Canals, 608
Critical Depth, Velocity Profiles, and Averaging, 610
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595
Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497
Subsurface Drainage System Design and Drain Water Quality, 619

Desiccation
Compacted Clay Liners and Covers for Arid Sites, 387

Design
Airport Towers: A New Generation, 1296

Applying Total Quality Management to Design and Construction, 686

ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327

Automated People Movers IV, 1328

Behavior and Design of Steel Single Plate Shear Connections, 944

Behavior of Chemically Bonded Anchors, 961

Bolted Connection Design Values Based on European Yield Model, 929

Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032

Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330

Building the SSC: A Texas-Sized Challenge, 1263

Can Engineers Cut Curtain-Wall Failures?, 1291

Collaboration in the Engineering Classroom, 791

Compendium of Pumped Storage Plants in the United States, 1344

Comprehensive Open-Channel Expansion Transition Design, 580

Cost Model for Low-Pressure Membrane Filtration, 347

Design Charts for Double-Walled Cofferdams, 386

Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940

Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941

Design Projects in Civil Engineering Curriculum, 793

Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275

Documented Constructability Savings for Petrochemical-Facility Expansion, 735

A Dome To Remember, 1292

Doubly Symmetric Tube Structures. I: Static Analysis, 919

Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920

Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352

Dynamic Programming Optimization of Water-Treatment-Plant Design, 369

Eccentric Connection Design: Geometric Approach, 839

Eccentrically Connected Cleat Plates in Compression, 849

Efficiency of Vibrational Energy Dissipation by Moving Shot, 955

Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918

Failure as Source of Engineering Judgment: Case of John Roebling, 736

Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466

Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995

Fossil Power Plant Constructability: Applications of CII Concepts, 139

Geometric Design Projects for Highways: An Introduction, 1358

History of Steel Beam-Column Design, 835

Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551

KBES for Design of Steel Structural Elements, 52

Keller Canyon Fills a Need, 1280

Landfill on Screen, 1244

Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60

Masonry Carries the Load, 1208

Minimization of Multistage RBC Active Disc Area, 314

Multiple-Zone Potential Solution around Wing-Body Configurations, 37

Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011

Piled Rafts in Swelling or Consolidating Soils, 397

Protection Against Scour at SAF Stilling Basins, 501

Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106

Regionalized Partial-Duration Balanced-Hydrograph Model, 657

Reliability of Wood Structural Systems, 954

Reliability-Based Design of Wood Members Subject to Ponding, 994

Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544

Seismic Response of and Design Aids for Arch Bridges, 973

Service Load of Short, Large-Diameter Bored Piles, 462

Serviceability Design in LRFD for Wood, 1012

Short-Duration-Rainfall Intensity Equations for Drainage Design, 643

Shotcrete for Underground Support VI, 1382

Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905

Simulation Technologies for Planning Heavy Construction Processes, 101

Slenderness of Columns in Braced Frames, 998

Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809

Strength Design for Reinforced-Concrete Hydraulic Structures, 1385

System Reliability Concepts in Design of Transmission Lines, 823

Thermal Actions for Concrete Bridge Design, 938

Triple Plate Balanced Resistance Water-Level Gauge, 517

Unified Design of Horizontal Circular Curves, 1033

X-Bracing Anchorage Connection, 996

Design criteria

Analysis and Design of Trickle-Irrigation Laterals, 639

Behavior of Arc Spot Weld Connections in Tension, 930

Design of Pile Foundations, 1350

High Speed Ground Transportation Systems I: Planning and Engineering, 1362

High-Tech Landfill Caps, 1235

Hydraulic Design of Reversible Flow Trashracks, 1363

LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976
Requirements for Lateral Bracing of Columns with Two Spans, 970
Taming the Urban Underground, 1206
Tests of Profiled Steel Decks with V-Stiffeners, 936

Design improvements
Subsurface Drainage System Design and Drain Water Quality, 619

Design standards
HyperDocument Model for Design Standards Documentation, 63

Desorption
Sorption and Desorption of Dyes by Sulfonated Coal, 320

Desulfurization
Fast Foundation for Soft Clay, 1215

Deterioration
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725

Developing countries
Bringing Finance to the Table, 1314
Facilitating Sustainable Development: Is Our Approach Correct?, 779
Foreign Investment in Latin America: A Second Look, 1317
Holistic Approach to Irrigation Management in Developing Countries, 603
Infrastructure, IFC-Style, 1311
Lost & Found: Comeback at the IDB, 1316
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124
Quality Assurance for Thermal Power Project Construction in India, 739
World Bank Update, 1318

Development
Adult-Development Perspective for Managing Professionals, 680
Relevant Engineering in 21st Century, 778
Robot for Interior-Finishing Works, 9

Dewatering
Estimation and Optimization of Transient Seepage with Free Surface, 655
Mechanisms for Overdosing in Sludge Conditioning, 307

Diaphragm wall
Analysis of Deep Excavation in Boston, 378

Diaphragms
Fatigue Damage to Steel Bridge Diaphragms, 751
High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894

Dielectric constant
Electrical Response of Two-Phase Soil: Theory and Applications, 451

Differential equations
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Parametrically Induced Vibration in Concrete Columns, 218
Responses of Dynamic Systems Excited by Non-Gaussian Pulse Processes, 257
Stability of Active-Tendon Structural Control with Time Delay, 207
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173

Differential settlement
Limitations of Conventional Analysis of Consolidation Settlement, 454
Sinkhole Damage to Masonry Structure, 738
Structural Stiffness Influence on Soil Consolidation, 383

Diffraction
Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156
Second-Order Radiation Condition for Surface Wave–Body Interaction, 216

Diffusers
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367

Diffusion
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366
Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571
Measurement of Effective Diffusivities in Solidified Wastes, 299
Stochastic Drying and Creep Effects in Concrete Structures, 822

Diffusion coefficient
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Digital mapping
Application of GPS Positioning to Management of Mobile Operation, 1019
Water-Distribution GIS from Fragmented and Incomplete Information, 71

Digital systems
Digital Image Processing: Techniques and Applications in Civil Engineering, 1351

Digital techniques
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438
Phototriangulation Using CCD Camera in Close-Range Environment, 1017
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157

Digital terrain model
DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68
Review of GIS Applications in Hydrologic Modeling, 1115

Dilatancy
Stability of Granular Materials in Postpeak Softening Regime, 155

Dilution
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552

Dimensional analysis
Stability of Riprap at Bridge Piers, 558

Disaster relief
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199

Discharge
Analysis and Design of Trickle-Irrigation Laterals, 639
Detachment of Buoyant Surface Jets Discharged on Slope, 545
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595
Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130
Shelter from the Storm, 1245

Discharge coefficients
Analysis of Rectangular Side Sluice Gate, 656
Characteristics of Circular-Crested Weir, 557

Discrete elements
Dynamic Equations for System of Irregularly Shaped Plane Bodies, 280
Lumped-Parameter Approach to Stability Analysis, 273
New Perspectives on Soil Creep, 404
Optimal Discretization of Random Fields, 215
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250

Disinfection
Development of Regression Models with Below-Detection Data, 310

Dispersion
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148

Displacement
Analysis of Concave Curling in Concrete Slabs, 1068
Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470
Dynamic Compaction of Saturated Porous Columns, 241
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180
Force-Displacement Behavior of Flexible Plate Anchors, 409
Half-Plane Crack Under Normal Load: Complete Solution, 281
Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909
Observations on Higher-Order Beam Theory, 42
On Loads Equivalent to Geometrical Imperfections in Shells, 158
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267
Stress Analysis of Borehole in Poroelastic Medium, 220
Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

Displacements
Field Tests of Anchors in Clay. I: Description, 465
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Transient Lamb's Solution for Surface Strip Impulses, 290

Dissipation
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Properties of Incremental Solutions for Dissipative Material, 186

Dissolved organic carbon
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301

Dissolved oxygen
Measurement of Oxygen Transfer in Clean Water, 1371
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361

Distortion
Distortional Buckling Curves for Composite Beams, 927
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Ditches
Vertical Earth Loads on Buried Engineered Works, 403

Diversion
Three-Dimensional Flow Structure at Open-Channel Diversions, 568

Docks
London Linkage, 1258

Documentation
HyperDocument Model for Design Standards Documentation, 63

Domes, structural
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Colorado Dome, 1246
A Dome To Remember, 1292
Fast-Track Stadium, 1204
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960

Doppler systems
Irregular Wave-Induced Velocities in Shallow Water, 1172

Dowel action
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078

Downdrag
Pile Groups under Negative Skin Friction, 469

Drag
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163
Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153

Drag coefficient
Wave Attenuation by Vegetation, 1149

Drainage
Agronomic and Environmental Benefits of Water-Table Management, 658
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725
Drainage Water Disposal, Jeddah, Saudi Arabia, 1146
Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638
Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369
Performance of Historic Adobe Structure, 747
Prognosis on Managing Trace Elements, 623
Recycling Drainage Water in San Joaquin Valley, California, 599
Reduction of Deep Percolation and Drain Water, 622
Saline Drain Water Reuse in Agroforestry Systems, 591
Transient Infiltration from Cavities. I: Theory, 612
Treatment, Reuse, and Disposal of Drain Waters, 616

Drainage structures
Harry Seed, Liquefaction & the Gravel Drain, 1303

Drainage systems
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114
Short-Duration-Rainfall Intensity Equations for Drainage Design, 643
Subsurface Drainage System Design and Drain Water Quality, 619

Drains
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581

Drawdown
Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Dredging
Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164
Predicting Release of PCBs at Point of Dredging, 302
Probing the Port of Los Angeles, 1196
Report on Ship Channel Design, 1380
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158

Drift
Seismic Response of Eccentrically Braced Tall Building, 872
Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809

Drilled shafts
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349

Drilling
Drilling with Direction, 1271
New Wells Safeguard Scenic Tahoe, 1234

Drop structures
Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544

Droughts
Alfalfa Irrigation During Drought, 661
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Revised Surface-Water Supply Index for Western United States, 1128
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123

Ductility
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Concrete Toughness After 20 Years, 885
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228
Seismic Response of Steel Beams Coupling Concrete Walls, 1010

Dunes
Alluvial Resistance in Transition Regime, 534

Dust
Accidents on Interstate Highways Caused by Blowing Dust, 743

Dyes
Sorption and Desorption of Dyes by Sulfonated Coal, 320

Dynamic analysis
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418
Discrete Volume-Element Method for Network Water-Quality Models, 1133
Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Effect of Slab on Inelastic Response of R/C Buildings, 883
Introduction to Structural Failure Modes for Nuclear Power Facilities, 140
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912
Seismic Response of R/C Frames with Irregular Profiles, 1
Simplified Approach for Pile and Foundation Interaction Analysis, 461

Dynamic characteristics
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979

Dynamic loads
Finite Element Analysis of Reinforced Concrete Structures II, 1355
Impact Studies of Multigirder Concrete Bridges, 942
Moving Load Response of Layered Soil. I: Formulation, 270
Moving Load Response of Layered Soil. II: Verification and Application, 271
Response of Continuous Pavements to Moving Dynamic Loads, 253
Simplified Approach for Pile and Foundation Interaction Analysis, 461
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250

Dynamic models
Cognitive Force Control of Excavators, 26
Dynamic Model of Excavator, 25

Dynamic pile driving formulas
Simplified Dynamic Method for Pile-Driving Control, 416

Dynamic pressure
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367

Dynamic programming
Diagnostic Checking in Stochastic Dynamic Programming, 1131
Evaluating Artificial Recharge Needs of Aquifer, 1137
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503
Scheduling of Repetitive Projects with Cost Optimization, 123

Dynamic properties
Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274

Dynamic response
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Cyclic Characterization of Liquefiable Sands, 482
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746
Dynamic Along-Wind Response of Buildings: Comparative Study, 891
Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943
Dynamic Damping of Payload Motion for Cranes, 120
Dynamic Response of Poroelastic Bed to Water Waves, 553
Dynamic Response of Tank Containing Two Liquids, 179
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Effect of Member Snap on Space Truss Collapse, 199
Effect of Sidewalk Vents on Bridge Response to Wind, 832
Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916
Model Study of a Cable-Moored Conical Platform, 44
Models of Viscoelasticity with Complex-Order Derivatives, 234
Moving Load Response of Layered Soil. I: Formulation, 270
Moving Load Response of Layered Soil. II: Verification and Application, 271
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74
Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Responses of Dynamic Systems Excited by Non-Gaussian Pulse Processes, 257
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141
Seismic-Induced Slip of Concrete Gravity Dams, 812
Simple Model for Optimal Control of Tall Buildings, 857
Simplified Method for Dynamic Response of Tapered Structure, 236
Structural Engineering in Natural Hazards Mitigation, 1386
Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19
Tests and Ratings of Short-Span Steel Bridges, 928
Transient Scattering from Submerged Cylindrical Shell with Appendages, 233
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819

Dynamic stability
Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240

Dynamic structural analysis
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920

Dynamic tests
Dynamic Tests of Pipe Pile in Saturated Peat, 467

Dynamics
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191
Gust Buffeting. II: Dynamic Alongwind Response, 826

Impedance Functions of Piles in Inhomogeneous Media, 458
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254
Postbuckling and Hysteresis Models of Open-Web Girders, 853
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Sequential Coupling: New Structural Connection for Seismic Control, 816
Simulation of Spatially Incoherent Random Ground Motions, 206

Earth pressure

Behavior of Cantilever Retaining Walls, 479
Vertical Earth Loads on Buried Engineered Works, 403

Earth reinforcement

Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Earthquake damage

Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753
Pipeline Damage Due to Wave Propagation, 463

Earthquake engineering

Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Structural Engineering in Natural Hazards Mitigation, 1386

Earthquake excitation

Optimal Direct Output Feedback of Structural Control, 276
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949
Toppling of Computer-Type Equipment under Base Excitation, 156

Earthquake magnitude scale

Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380

Earthquake prediction

The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294

Earthquake resistant structures

Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Minimum Variance Control of Base-Isolated Floors, 829
RC Flat Slab–Column Subassemblages Under Lateral Loading, 915
RC Frame Connections Rehabilitated by Jacketing, 886
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141
Seismic Retrofitting: Spending to Save, 1203
Structural Engineering in Natural Hazards Mitigation, 1386

Earthquake simulation models

Simulation of Spatially Incoherent Random Ground Motions, 206

Earthquakes

Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Dynamic Pressure of Water and Sediment on Rigid Dam, 232
Dynamic Response of Tank Containing Two Liquids, 179
Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Fatigue Reliability Under Nonstationary Loads: Model Application, 945
Free Rocking of Prismatic Blocks, 231
Friction-Controllable Sliding Isolation System, 259
Harry Seed, Liquefaction & the Gravel Drain, 1303
Lifelike Model, 1241
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195
Pipeline Damage Due to Wave Propagation, 463
Progressive Failure of Lower San Fernando Dam, 393
Project Velacs—Control Test Results, 452
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977

Seismic Remediation for Earth Dams, 1308
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Response of R/C Frames with Irregular Profiles, 1
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947
Seismic-Induced Slip of Concrete Gravity Dams, 812
Simplified Method for Dynamic Response of Tapered Structure, 236
Site-Dependent Strength-Reduction Factors, 1004
Torsional Coupling in Sliding Base-Isolated Structures, 813

Earthwork
A Better Grade Of Grade, 1282
Haul-Unit Performance, 121
Resource-Oriented Modeling and Simulation in Construction, 117
Subsurface Characterization With Solid Models, 483

Eccentric bracing
Seismic Response of Eccentrically Braced Tall Building, 872

Eccentric loading
Eccentric Connection Design: Geometric Approach, 839

Eccentric loads
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

Eccentricity
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967
Eccentrically Connected Cleat Plates in Compression, 849
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237
Postbuckling and Hysteresis Models of Open-Web Girders, 853
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813

Economic analysis
Bringing Finance to the Table, 1314
Cost-Effective Solid-Waste Characterization Methodology, 339
Housing Linkage Fees: Lessons for Los Angeles, 1096
Knowledge-Based Approach to Modular Construction Decision Support, 88
Microcomputer Bridge Management System, 1031

Economic development
Back to Iran, 1322
Facilitating Sustainable Development: Is Our Approach Correct?, 779
Facilitating Sustainable Development: Role of Engineer, 780
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781
Responsible Management of Tourist Island, 782
South Africa at the Crossroads, 1323
Sustainable Development and National Laws, 784
World Engineering Partnership for Sustainable Development, 783

Economic factors
Foreign Investment in Latin America: A Second Look, 1317
Misesian Assessment of Systems Analysis, 797
Scrap Tires: Management and Economics, 372

Economic growth
Environmental Consulting Grows Up, 1211
Foreign Investment in Latin America: A Second Look, 1317
Making the Leap, 1247

Economic impact
Decision Analysis of Alternative Highway Alignments, 1049
Hawaii: Growth, Government, and Economy, 1094

Economic justification
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142

Economics
Assessing Cost of Dam Failure, 1105
Buffer Zones Around Water-Supply Reservoirs, 1132
Cable-Stayed Convention Center, 1201
Canada's Environmental Review of the North American Free Trade Agreement, 785
GIS and Storm-Water Management, 1278
Governmental Priorities in Irrigation Project Selection in Indonesia, 1125
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Pressure Pipeline Design for Water and Wastewater, 1378
Recycling on the Mississippi, 1207
Relevant Engineering in 21st Century, 778

Eddy viscosity
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520

Edge effect
Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149
Transverse Vibration of Thick Annular Sector Plates, 242

Education
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774
Civil Engineering Evolution, 757
How We Falter and the Lessons We Learn, 804
Quality Improvement Experiences in E/A Firm, 682

Restructuring the Engineering and Engineering Technology Relationship, 773

Effective length

Behavior of Cold-Formed Steel Wall Stud Assemblies, 841

Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011

Stability of Nonsymmetric Cross-Bracing Systems, 815

Effective stress

Cohesion Intercept in Effective Stress-Stability Analysis, 450

Slope Failure Analysis Using Local Minimum Factor-of-Safety Approach, 490

Effective width

Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859

Effective Width of Locally Buckled Plates in Compression and Bending, 882

Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939

Efficiency

IVHS: The Invisible Revolution, 1221

Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

Effluents

Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594

Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148

Prediction of Rotating Biological Contactor Efficiency Using TOC, 328

Slow Sand Filtration of Secondary Effluent, 338

Egypt

Egypt's Real Time Water Management, 1304

Fast-Track Stadium, 1204

Eigenvalues

Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918

Optimal Discretization of Random Fields, 215

Elastic analysis

Distortional Buckling Curves for Composite Beams, 927

Elastic foundations

Simplified Approach for Pile and Foundation Interaction Analysis, 461

Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184

Elastic moduli

General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468

Wave Propagation in Ice-Covered Channels, 546

Elastic properties

General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468

Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164

Uniaxial Bending of Columns, 873

Elastics

Possible Ranges of End Slope for Cantilever Beams, 185

Elasticity

Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182

Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245

Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183

Dynamic Response of Poroelastic Bed to Water Waves, 553

Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246

Green's Functions for Transversely Isotropic Elastic Half Space, 251

Rational Mechanics of Axial Soil-Pile Interaction, 196

Scaling Laws in Mechanics of Failure, 258

Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171

Stress Analysis of Borehole in Poroelastic Medium, 220

Transverse Vibration of Thick Annular Sector Plates, 242

Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219

Elastoplasticity

Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214

Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295

Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908

Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909

Numerical Analysis of Drained Direct and Simple Shear Tests, 485

Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459

Shakedown of Frames with Semirigid Connections, 903

Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Electrical conductivity

Electrical Response of Two-Phase Soil: Theory and Applications, 451

Measurement of Effective Diffusivities in Solidified Wastes, 299

Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Electrical equipment

Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Electrical measurement

Detecting Leaks in Geomembranes, 1262

Elevation

DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68

Water-Table Correction Factors to Applied Gasoline Contamination, 334

Embankment stability
Deformation Analysis of Embankments, 448

Embankments
Banking on a Bridge, 1219
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473
Stability of Shale Embankments, 381
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384

Embayments
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349

Embedment
Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921
Behavior of Chemically Bonded Anchors, 961

Emergency services
Expert System Based Training for Emergency Management, 51
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199
New Way Out, 1191

Emission control
Predicting Pollution, 1228

Emissions
Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340
Predicting Pollution, 1228

Empirical equations
Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600

Employee relations
Employee Involvement in Engineering and Construction, 675
Motivating Technical Employees, 1229

Employees
Defensible Performance Appraisals, 669
Methods of Motivating for Increased Productivity, 672

Employment
Model of Career Choice for Craftworkers, 87

Energy
Properties of Incremental Solutions for Dissipative Material, 186
Turbulence in Rivers due to Navigation Traffic, 525

Energy absorption
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Seismic Response of Steel Beams Coupling Concrete Walls, 1010

Energy conservation
The Copper-Clad Library, 1284

Energy dissipation
Calculation of Compound-Open-Channel Flow, 578
Characteristics of B-Jump with Different Toe Locations, 549
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222
Efficiency of Vibrational Energy Dissipation by Moving Shot, 955
Energy Dissipation on Stepped Spillways, 529
Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862
Fatigue Behavior of High-Performance Concrete, 703
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899

Energy losses
Modeling Pipe Networks Dominated by Junctions, 550
Scattering of Water Waves by Vertical Cylinders, 1165

Energy methods
Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850
Comparative Study of Frequencies for Plates Carrying Mass, 202
Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148
Plastic Tripping of Ring Stiffeners, 898
Stability of Nonsymmetric Cross-Bracing Systems, 815

Energy recovery systems
Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371

Energy sources
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147

Engineering
How We Falter and the Lessons We Learn, 804
Implementing TQM in Engineering and Construction, 695

Engineering education
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774
Bachelor of Civil Technology and Civil Engineering Programs, 768
Civil Engineering Evolution, 757
Collaboration in the Engineering Classroom, 791
Design Projects in Civil Engineering Curriculum, 793
Developing Coastal Engineers, 769
Different Perceptions of Importance of Educational Objectives, 794
Engineering Education for Competitive International Economy, 799
Ethical Issues Experienced by Engineering Students and Practitioners, 801
Faculty Attitudes about Progress of Metrication, 776
Failure of Engineered Facilities: Academia Responds to the Challenge, 745
Importance of Teaching Construction Contract Specifications, 772
Including Failure Case Studies in Civil Engineering Courses, 749
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Land-Grant Policy and Engineering Education, 805
Listening to Research Clients, 803

Meeting Professional Development Needs in Large Consulting Firm, 795
Misesian Assessment of Systems Analysis, 797
Monitoring Well-Being of Civil Engineering Profession, 758
Professional Ethics Training for Engineering Firms, 775
Restructuring the Engineering and Engineering Technology Relationship, 773
Strategy for Passing the Civil P.E. Exam, 788
Too Many Failures: What Can Education Do?, 744

Engineering firms
Can the U.S. Compete?, 1315
The Financing Fray, 1320
Going International: Profit or Peril?, 1309
Making the Leap, 1247
Moving an Engineering Firm: A Checklist, 673
Professional Ethics Training for Engineering Firms, 775
Total Quality—Does it Work in Engineering Management?, 694

Engineering profession
Engineering: Environmental vs. Developmental Goals, 1218
Engineering Women: A View From the Workplace, 663
Human Factors in Civil and Geotechnical Engineering Failures, 388
Mandatory Continuing Professional Development for Relicensing of Engineers, 796
Relevant Engineering in 21st Century, 778
Restructuring the Engineering and Engineering Technology Relationship, 773
Sharing the Pride, 767
Structural Failures and Engineering Ethics, 893
What Do You Mean by That?, 1226

Engineers
Can Engineers Cut Curtain-Wall Failures?, 1291
Designing Executive-Development Programs for Engineering Managers, 678
Ethical Issues Experienced by Engineering Students and Practitioners, 801
Ethics in Practice, 762
Facilitating Sustainable Development: Role of Engineer, 780
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Getting Along: The Geotech and the CM, 1256
Mandatory Continuing Professional Development for Relicensing of Engineers, 796
Motivating Technical Employees, 1229
Why Do Engineers Wear Black Hats?, 756

Entrainment
Detachment of Buoyant Surface Jets Discharged on Slope, 545
Effect of Bed Surface Structure on Spherical Particle Stability, 1160

Entropy
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535

Environment
Enhancing Value of Environmental Data: Data Lineage Reporting, 298

Environmental compatibility
Pioneer Highway, 1250

Environmental effects
Lead is a Four-Letter Word, 1257

Environmental engineering
Environmental Consulting Grows Up, 1211
Facilitating Sustainable Development: Is Our Approach Correct?, 779
Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781
Responsible Management of Tourist Island, 782
Solid-Waste Management: Cooperative Extension Initiative, 800
Sustainable Development and National Laws, 784

Environmental impact statements
DART'S ASAP EIS, 1264

Environmental impacts
Canada's Environmental Review of the North American Free Trade Agreement, 785
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552
Kesterson Crisis, 614
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300
Prognosis on Managing Trace Elements, 623
Relevant Engineering in 21st Century, 778
World Engineering Partnership for Sustainable Development, 783

Environmental issues
Beach Nourishment Engineering and Management Considerations, 1329
Coastal Engineering Considerations in Coastal Zone Management, 1333
Coastal Engineering—1992, 1334
Coastal Management in Mexico: the Baja California Experience, 1335
Coastal Zone '93, 1336
Coastlines of Canada, 1337
Coastlines of Japan II, 1338
Coastlines of the Black Sea, 1339
Coastlines of the Gulf of Mexico, 1340
Coastlines of the Mediterranean, 1341
Coastlines of the Southern North Sea, 1342
Coastlines of Western Africa, 1343
Decision Analysis of Alternative Highway Alignments, 1049
Deltas of the World, 1347
Engineering: Environmental vs. Developmental Goals, 1218
Facilitating Sustainable Development: Role of Engineer, 780
Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091
Getting to the Nonpoint Source with GIS, 1240
High Speed Ground Transportation Systems I: Planning and Engineering, 1362
Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781

Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638
Keller Canyon Fills a Need, 1280
The Management of Coastal Lagoons and Enclosed Bays, 1368
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
OCEA Goes Green, 1252
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Report on Ship Channel Design, 1380
Superfund: New Leadership, Old Problems, 1210
Sustainable Development and National Laws, 784
Twenty-First Century Timber Engineering, 1389
Water Management in the '90s: A Time for Innovation, 1392
Waterpower '93, 1393
World Engineering Partnership for Sustainable Development, 783

Environmental planning
Getting to the Nonpoint Source with GIS, 1240

Environmental Protection Agency
Shelter from the Storm, 1245
Superfund: New Leadership, Old Problems, 1210
Water-Quality Modeling with EPA Reach File System, 1116
Whose Risk Is It, Anyway?, 1285

Environmental quality
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349
Facilitating Sustainable Development: Is Our Approach Correct?, 779
Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781
Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325
Relevant Engineering in 21st Century, 778
Responsible Management of Tourist Island, 782
Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Epoxy compounds
Thermomechanical Properties of Epoxy Mortars, 709

Equations of motion
Critical Depth Equations for Irrigation Canals, 608
Dynamic Equations for System of Irregularly Shaped Plane Bodies, 280
Evaluation of von Karman's Constant from Integral Flow Parameters, 565
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Equilibrium
Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362

Equilibrium equations
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967

Equilibrium state
Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Equipment
Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108
Multitask Motion Planning for Material Handling in Construction, 92
Speedy Backfilling for Old Mines, 1273
Toppling of Computer-Type Equipment under Base Excitation, 156
Use of Laser Targeting in Precise Machinery Surveys, 1018
Vehicle Impact Simulation, 1067

Equivalence
Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825
Parallel Connecting Beams for Equivalent Structures, 986

Erosion
Effect of Bank Stability on Geometry of Gravel Rivers, 574
Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171
Evaluation of Runoff and Erosion Models, 606
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539
Performance of Historic Adobe Structure, 747
Protection Against Scour at SAF Stilling Basins, 501
Riprap Criteria below Pipe Outlet, 504
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562
Stabilization of Jointing Sand in Block Paving, 1036
Three-Dimensional Calculation of Scour Around Cylinders, 556

Erosion control
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652

Error analysis
DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Modeling Human Performance in Reinforced Concrete Beam Construction, 81
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157
Water-Table Correction Factors to Applied Gasoline Contamination, 334

Errors
Blunder Detection and Data Snooping in LS and Robust Adjustments, 1023
Modeling Human Performance in Reinforced Concrete Beam Construction, 81
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Pulsation Errors in Compressible Flow Measurement, 323
Second-Order Design: Shooting for Maximum Reliability, 1021

Estimating
Estimating Autocovariance of In-Situ Soil Properties, 382
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060

Estimation
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659
Development of Regression Models with Below-Detection Data, 310
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918
Estimation of Flood Frequencies for Ungaged Catchments, 561
Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523
Optimal Discretization of Random Fields, 215
Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140
Population Estimation of City from Aerial Photographs: Riyadh Case, 1100

Estuaries
Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528
Getting to the Nonpoint Source with GIS, 1240
Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121

Ethics
Ethical Issues Experienced by Engineering Students and Practitioners, 801
Ethics in Practice, 762
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199
Marketing Strategies for Engineers, 1370
Practice of Professionalism, 761
Professional Ethics Training for Engineering Firms, 775
Professional Issues in Coastal Engineering, 787
Relevant Engineering in 21st Century, 778
Structural Failures and Engineering Ethics, 893
Whistle-Blowing—A Professional Responsibility, 759
Why Do Engineers Wear Black Hats?, 756

Europe
Analyzing Competitive Position in the Construction Market of Eastern Europe, 664
What's In It for Me?, 1310

Eutrophication
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361

Evaluation
Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Novel Technique for Evaluation of Advanced Anaerobic Reactors, 359
Total Quality—Does it Work in Engineering Management?, 694
Use of Structural Analysis Programs in Consulting, 802

Evaporation
Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137

Evolution, development
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166
Integrated Genetic Algorithm for Optimization of Space Structures, 36

Examination
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155

Excavation
Analysis of Deep Excavation in Boston, 378
Analysis of Delayed Failure in Sloping Excavations, 455
Cognitive Force Control of Excavators, 26
Dynamic Model of Excavator, 25
Finite Element Analyses of HDR-4 Excavation, 13
Motion and Path Control for Robotic Excavation, 16
Performance of Utility-Trench Shoring: Case Study, 734
Taming the Urban Underground, 1206

Excitation
Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248
New Excitation System for Indoor Testing of Overhead Conductors, 145
Responses of Dynamic Systems Excited by Non-Gaussian Pulse Processes, 257
Spatial Seismic Excitations and Response Spectra, 293

Exoskeleton structures
Steel Exoskeleton Defines Architecture, 1260

Expansion
Expansion Potential According to *Uniform Building Code*, 442
Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Expansive clays
Piled Rafts in Swelling or Consolidating Soils, 397

Expansive soils
Expansion Potential According to *Uniform Building Code*, 442
Unsaturated Soils, 1390

Experience
Failure as Source of Engineering Judgment: Case of John Roebling, 736

How We Falter and the Lessons We Learn, 804

Runway Rehab: A Case for CADD, 1242

Experimental data

Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283

Experimentation

Mechanisms for Overdosing in Sludge Conditioning, 307

Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914

Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Transport of Fine Sands by Currents and Waves, 1154

Expert systems

Bridge Planning Using GIS and Expert System Approach, 66

Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55

Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108

Computer-Based Environment for Wastewater Treatment Plant Design, 356

Development and Application of Expert Geographic Information System, 69

Expert Geographic Information System for Texas Water Planning, 1111

Expert System Based Training for Emergency Management, 51

Expert System for Optimum Design of Concrete Structures, 59

Interactive Computer Graphics for Expert-System Verification, 1134

KBES for Design of Steel Structural Elements, 52

Knowledge-Based Approach to Modular Construction Decision Support, 88

Knowledge-Based Design of Project-Procurement Process, 57

Knowledge-Based System for Design of Signalized Intersections, 2

Nonmonotonic Reasoning in Design, 53

SITE CODE: Computer-Based Regulatory Information for Site Development, 1087

STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Explosion effects

After the Blast, 1230

Explosions

After the Blast, 1230

Extraction procedures

Analysis of Segmentation Algorithms for Pavement Distress Images, 1083

Facilities

Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099

Faculty

Different Perceptions of Importance of Educational Objectives, 794

Faculty Attitudes about Progress of Metrication, 776

Failure load

Failure Criteria for Fibrous Anisotropic Materials, 710

Failure modes

Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477

Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142

Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871

Plastic Tripping of Ring Stiffeners, 898

Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141

Stochastic Optimization Models for Structural-Reliability Analysis, 818

Toppling of Computer-Type Equipment under Base Excitation, 156

Failure surface

Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392

Estimation of Uplift Capacity of Helical Anchors in Clays, 394

Numerical Evaluation of Terzaghi's N_γ, 410

Failures

Can Engineers Cut Curtain-Wall Failures?, 1291

Computer-Aided Liability, 1239

Contemporary Model of Civil Engineering Failures, 771

Failure as Source of Engineering Judgment: Case of John Roebling, 736

Failure Criteria for Fibrous Anisotropic Materials, 710

Failure of Engineered Facilities: Academia Responds to the Challenge, 745

Human Factors in Civil and Geotechnical Engineering Failures, 388

Mechanics and Failure of Multilayer, Reinforced Membranes, 717

Predicting Pipe Failure Effects in Water Distribution Networks, 1102

Predicting Water-Main Breakage Rates, 1127

Probability-Based Bridge Inspection Strategy, 1005

RC Flat Slab–Column Subassemblages Under Lateral Loading, 915

Reliability and Uncertainty Analyses in Hydraulic Design, 1379

Scaling Laws in Mechanics of Failure, 258

Structural Failures and Engineering Ethics, 893

Too Many Failures: What Can Education Do?, 744

Failures, investigations

Collapse of Ashtabula Bridge on December 29, 1876, 742

Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752

Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Including Failure Case Studies in Civil Engineering Courses, 749

The Silver Bridge Collapse Recounted, 754

What Sank the Lacey Murrow?, 1293

Falling bodies
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058

Falsework
Driving Under a Construction Site, 1224

Far field
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244

Farm management
Recycling Drainage Water in San Joaquin Valley, California, 599

Fast track construction
Fast Foundation for Soft Clay, 1215

Fasteners
LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976

Fatigue
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814
Collapse of Ashtabula Bridge on December 29, 1876, 742
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222
Fatigue Behavior of High-Performance Concrete, 703
Fatigue Damage to Steel Bridge Diaphragms, 751
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Fatigue Reliability Under Nonstationary Loads: Model Application, 945
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842
Influence of Surface Finish on Sorptivity on Concrete, 705
Marine Component Fatigue Reliability, 932
Optimum Design of Three-Dimensional Framework Structures, 846
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728
Unwanted Legacy of Asphalt Pavement Compaction, 1086

Fatigue life
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978

Fatigue limit
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978

Fatigue tests
Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069

Federal agencies
DART'S ASAP EIS, 1264

Federal aid
Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050
So Much Pavement, So Little Time, 1289

Federal government
The 'Criminalization' of Government Procurement, 1217
Engineering Education for Competitive International Economy, 799
Land-Grant Policy and Engineering Education, 805
Metric Design: It's Real, 1248
Superfund: New Leadership, Old Problems, 1210

Federal laws
So Much Pavement, So Little Time, 1289
Sustainable Development and National Laws, 784

Feedback control
Computerized Daily Site Reporting, 104
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267
Optimal Direct Output Feedback of Structural Control, 276

Fees
Designing Private Funding Programs for Public Highways, 1098
Housing Linkage Fees: Lessons for Los Angeles, 1096
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199

Fiber laminates
Failure Criteria for Fibrous Anisotropic Materials, 710

Fiber optics
Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935

Fiber reinforced materials
Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188
Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189
Improved Method for Determining Interfacial Stresses in Composites, 21
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Shotcrete for Underground Support V, 1381

Fiber reinforced plastics
Bond and Slip of FRP Rebars in Concrete, 698
Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995
Local Buckling of FRP Beams and Columns, 720
Plastic Potential, 1265
Questioning Composites, 1195

Fibers
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Field investigations
Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453

In Search of Better Load Ratings, 1275
Merging Laboratory and Field Data in Bridge Scour, 564
Structural Response of Full-Scale Concrete Box Culvert, 989

Field tests
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418
Detecting Leaks in Geomembranes, 1262
Energetic Bubble Plumes in Arbitrary Stratification, 532
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471
Experimental Study of Timber Trusses and Joints, 878
Field Measurements of Secondary Currents in Straight Rivers, 526
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084
Field Tests of Anchors in Clay. I: Description, 465
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Finite Element Analyses of HDR-4 Excavation, 13
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401
Performance of Deep-Corrugated Steel Box-Type Culvert, 400
Service Load of Short, Large-Diameter Bored Piles, 462
Short-Term Goal Setting for Construction, 119
Unwanted Legacy of Asphalt Pavement Compaction, 1086
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360

Filament wound materials
Time-Dependent Response of Three-Filament Cord, 197

Fills
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Filters
Application of Filtering Techniques for Incident Detection, 1028
Washout of Grains from Filtered Sand and Gravel Materials, 376

Filters, digital
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438

Filtration
Cost Model for Low-Pressure Membrane Filtration, 347
Glyphosate Removal from Drinking Water, 368
Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Particle Size and Chemical Effects on Contact Filtration Performance, 331
Role of Suspension Polydispersivity in Granular Media Filtration, 308

Financial analysis
Automating Urban Freeways: Financial Analysis for User Groups, 1064
Going International: Profit or Peril?, 1309
Trends in Construction Contractor Financial Data, 134

Financial management
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Keeping the Books: A Taxing Task, 1307
World Bank Update, 1318

Financial reports
Keeping the Books: A Taxing Task, 1307

Financing
Bringing Finance to the Table, 1314
Can the U.S. Compete?, 1315
Designing Private Funding Programs for Public Highways, 1098
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142
The Financing Fray, 1320
Fit to Drink, 1232
Infrastructure, IFC-Style, 1311
Lost & Found: Comeback at the IDB, 1316
Private Financing for Infrastructure, 1312
World Bank Update, 1318

Finegrained soils
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439

Finite difference method
Analysis of Laminated Glass Units, 895
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581
Numerical Simulations of Large Water Waves due to Landslides, 573
Thermal Stresses in Spherical Shells, 22

Finite differences
Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718
Two-Dimensional Water Flood and Mudflow Simulation, 507

Finite element analysis
Behavior of Composite Timber-Concrete Floors, 982
Large-Strain Analysis of Reinforced Membranes, 294

Finite element method
Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921
Analysis of Deep Excavation in Boston, 378
Applications of Viscoelastic Dampers to High-Rise Buildings, 874

Behavior of Cantilever Retaining Walls, 479
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Comparative Study of Frequencies for Plates Carrying Mass, 202
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418
Delamination Characteristics around Hole in Laminates with Softening Strip, 29
DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68
Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173
Effective Width of Locally Buckled Plates in Compression and Bending, 882
Experimental Study of Behavior of Composite Space Trusses, 848
Fatigue Damage to Steel Bridge Diaphragms, 751
Finite Element Analyses of HDR-4 Excavation, 13
Finite Element Analysis of Reinforced Concrete Structures II, 1355
Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248
Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221
Improved Method for Determining Interfacial Stresses in Composites, 21
Inelastic Behavior of Hyperbolic Cooling Tower, 933
Interaction of Axial and Lateral Pile Responses, 424
Kalman Filter—Finite Element Method in Identification, 159
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884
Nonlinear Analysis of Reinforced-Concrete Shells, 1001
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723
Numerical Modeling of Transient Creep in Polycrystalline Ice, 268
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Soil-Water Distribution under Trickle Source, 615
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419
Vehicle Impact Simulation, 1067
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827
XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Finite elements

Analysis of Arch Dams, 892
Analysis of Delayed Failure in Sloping Excavations, 455
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Complete Stiffness Matrices for Buckling Analysis of Frames, 161
Compression Response of Cracked Reinforced Concrete, 1009
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
False Paradox of Torsional Buckling, 1013
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244
Finite Element Method for Buckling Analysis of Plate Structures, 864
Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295
Hybrid Plane Quadrilateral Element with Corner Rotations, 950
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078
Nonlinear Finite Element Analysis of RC Slab Bridge, 811
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
Object-Oriented Finite Element Analysis Using EER Model, 962
Optimal Discretization of Random Fields, 215
Performance of Deep-Corrugated Steel Box-Type Culvert, 400
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252
Selection of Random Field Mesh in Finite Element Reliability Analysis, 187
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164
Shell Finite Element Formulated on Shell Middle Surface, 266

Fire resistance

Buckling Fire Endurance of Steel Columns, 904
Composite Construction in Steel and Concrete II, 1345
Tests of Fire-Resistant Bolts and Joints, 983

Twenty-First Century Timber Engineering, 1389

Fire resistant materials

Tests of Fire-Resistant Bolts and Joints, 983

Fixed-bed models

Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538

Fjords

Numerical Simulations of Large Water Waves due to Landslides, 573

Flanges

Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859

Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858

Flexibility

Force-Displacement Behavior of Flexible Plate Anchors, 409

High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204

High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176

Structural and Orbital Conditions on Response of Large Space Structures, 23

Flexible connections

Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890

Stability and Strength of Rigid and Semirigid Plane Frameworks, 28

Flexible pavements

Recyclability of Moisture Damaged Flexible Pavements, 731

Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035

Waste Products as Highway Materials in Flexible Pavement System, 1056

Flexural strength

Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995

Tests of Profiled Steel Decks with V-Stiffeners, 936

Flexure

Direct Analysis of Slender Columns with P-Delta Effects, 855

Flexural Buckling of Pretwisted Columns, 224

Rigidities of Horizontally Curved, Flat Structures, 948

Floating structures

Colorado Dome, 1246

What Sank the Lacey Murrow?, 1293

Flocculation

Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309

Flood control

Assessing Cost of Dam Failure, 1105

Numerical Modeling of Flood Propagation through System of Reservoirs, 514

Flood forecasting

Grouped Response Units for Distributed Hydrologic Modeling, 1118

Numerical Modeling of Flood Propagation through System of Reservoirs, 514

Radar-Assisted Real-Time Flood Forecasting, 1103

Flood frequency

Estimation of Flood Frequencies for Ungaged Catchments, 561

Flood-Flow Frequency Model Selection in Southwestern United States, 1122

Flood hydrology

Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104

Radar-Assisted Real-Time Flood Forecasting, 1103

Flood routing

Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140

Step-Function Response of Muskingum Reach, 609

Flooding

Incorporating Dam Break Concerns in School Site Selection, 1092

Two-Dimensional Water Flood and Mudflow Simulation, 507

Floods

Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497

Flood-Flow Frequency Model Selection in Southwestern United States, 1122

Regionalized Partial-Duration Balanced-Hydrograph Model, 657

Floors

Behavior of Composite Timber-Concrete Floors, 982

Florida

A Solid Waste Solution, 1251

Flow

Asymptotic Solutions and Behavior of Outfall Flumes, 524

Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593

Criterion Delineating the Mode of Headcut Migration, 494

Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513

Flow characteristics

Self-Aerated Flows on Chutes and Spillways, 506

Turbulence in Rivers due to Navigation Traffic, 525

Flow control

Analysis of Rectangular Side Sluice Gate, 656

Characteristics of Circular-Crested Weir, 557

Control Method for On-Demand Operation of Open Channel Flow, 596

DACL System Dynamic Performance. I: Response-Prediction Analysis, 583

DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Flow distribution

Discrete Volume-Element Method for Network Water-Quality Models, 1133

Flood-Flow Frequency Model Selection in Southwestern United States, 1122

Flow duration curves

Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130

Flow measurement
Characteristics of Circular-Crested Weir, 557
Pulsation Errors in Compressible Flow Measurement, 323
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520

Flow profiles
Analysis of Rectangular Side Sluice Gate, 656
Nonunique Water-Surface Profiles in Open Channels, 579

Flow rates
Analysis of Rectangular Side Sluice Gate, 656
Correction for Settlement of Parshall Flume, 660
Measuring Water in Trapezoidal Canals, 592

Flow resistance
Factors Affecting Conveyance in Meandering Compound Flows, 576
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Flow separation
Detachment of Buoyant Surface Jets Discharged on Slope, 545

Flue gases
Fast Foundation for Soft Clay, 1215

Fluid dynamics
Three-Dimensional Calculation of Scour Around Cylinders, 556
Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003

Fluid flow
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191
Stress Analysis of Borehole in Poroelastic Medium, 220

Fluid mechanics
Analytical Model of Viscoelastic Fluid Dampers, 993
Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498

Fluid-structure interaction
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186
Interaction of Waves with *N* Vertical Circular Cylinders, 1188
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
Proportional Strain Tests of Fresh-Water Ice Rubble, 46
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252
Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003
Water Waves on Flexible and Porous Breakwaters, 208

Flumes
Correction for Settlement of Parshall Flume, 660
Hydraulic Design of Flume Aqueducts, 509
Measuring Water in Trapezoidal Canals, 592
Rotating Circular Flume, 536
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566

Flutter
Delamination Effect on Flutter of Homogeneous Laminated Plates, 34
Effect of Sidewalk Vents on Bridge Response to Wind, 832

Fly ash
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721
Creep of Mass Concrete at Early Ages, 724
Fly Ash for Soil Improvement, 1356
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425
Permeability Behavior of a Water Treatment Sludge, 474
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711
Utilization of Industrial By-Products for Construction Materials, 1391
Waste Products as Highway Materials in Flexible Pavement System, 1056

Foods
Prediction of Rotating Biological Contactor Efficiency Using TOC, 328

Footings
Numerical Evaluation of Terzaghi's N_γ, 410
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421

Force
Position-Force Adaptive Control for Construction Robots, 27

Forecasting
Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075
Digger's Decline: A Fable for Civil Engineers, 792
Forecasting Final Cost and Budget of Construction Projects, 79
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141
Masonry Productivity Forecasting Model, 91
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079

Foreign countries
Foreign Investment in Latin America: A Second Look, 1317
Going International: Profit or Peril?, 1309

Foreign engineering
Vietnam: Worth Looking Into, 1319

Foreign firms
Inside the System: The Japanese Construction Company, 1313

Foreiga projects
Analyzing Competitive Position in the Construction Market of Eastern Europe, 664
Back to Iran, 1322
Bringing Finance to the Table, 1314
Can the U.S. Compete?, 1315
Dutch Globetrotting Pays Off, 1321
The Financing Fray, 1320
Going International: Profit or Peril?, 1309
Vietnam: Worth Looking Into, 1319

Foreign trade
Analyzing Competitive Position in the Construction Market of Eastern Europe, 664
Canada's Environmental Review of the North American Free Trade Agreement, 785

Forensic engineering
Certificate of Merit in Civil Litigation, 789
Failure of Engineered Facilities: Academia Responds to the Challenge, 745

Forestry
Saline Drain Water Reuse in Agroforestry Systems, 591

Formwork, construction
Composite Profiled Beams, 866

Fossil fuels
Fossil Power Plant Constructability: Applications of CII Concepts, 139

Fouling
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367

Foundation construction
Design of Pile Foundations, 1350

Foundation design
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Plate-Load Tests of Collapsible Soils, 411

Foundations
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Approximate Green's Function for Surface Foundations, 464
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421
Sinkhole Damage to Masonry Structure, 738
Structural Stiffness Influence on Soil Consolidation, 383

Fourier analysis
Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943

Fourier series
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237
Flexural Buckling of Pretwisted Columns, 224

Fourier transform
Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211
Stress Analysis of Borehole in Poroelastic Medium, 220
Transient Lamb's Solution for Surface Strip Impulses, 290

Fracture mechanics
Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Finite Element Analysis of Reinforced Concrete Structures II, 1355
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166
Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188
Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189
Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723
Scaling Laws in Mechanics of Failure, 258

Fractures
Collapse of Ashtabula Bridge on December 29, 1876, 742
Effects of Aggregate Top Size on Bituminous Concrete, 732
Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Framed structures
Complete Stiffness Matrices for Buckling Analysis of Frames, 161
Computer-Automated Design of Reinforced Concrete Frameworks, 922
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180
Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295
Optimum Design of Three-Dimensional Framework Structures, 846
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910
Shear Behavior of RC Structural Walls, 847

Frames
Analysis of Multiple-Bay Frames Using Continuum Model, 834
Behavior of Curtailed Wall-Frame Structures, 965

Doubly Symmetric Tube Structures. I: Static Analysis, 919
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920
RC Frame Connections Rehabilitated by Jacketing, 886
Shakedown of Frames with Semirigid Connections, 903
Slenderness of Columns in Braced Frames, 998
Stability and Strength of Rigid and Semirigid Plane Frameworks, 28
Stability of Pitched-Roof Frames in National Building Codes, 980

France
Bridge to the Future, 1189
Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041
The French Composite: A Bridge for Normandy, 1205

Free surfaces
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195
Verification of Theory of Roll-Wave Formation, 537

Freeze-thaw cycle
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Mathematics of Concrete Scaling, 716

Freezing
Frost Action in a Hydrophobic Material, 49
Hydrocarbon Exclusion from Ground Water During Freezing, 344
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Freight transportation
Two-Time Winner, 1300

Frequencies
Comparative Study of Frequencies for Plates Carrying Mass, 202
Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200
Seismic Response of Eccentrically Braced Tall Building, 872

Frequency
Classification of Maintenance Costs in Scottish Housing Associations, 750
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979

Frequency analysis
Crack-Induced Changes in Eigenparameters of Beam Structures, 255
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438

Frequency distribution
Estimation of Flood Frequencies for Ungaged Catchments, 561

Fresh water
Invasion of the Zebra Mussels, 1233
Proportional Strain Tests of Fresh-Water Ice Rubble, 46

Friction
Application of Hybrid Sliding Isolation System to Buildings, 272
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985
Friction-Controllable Sliding Isolation System, 259
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Seismic-Induced Slip of Concrete Gravity Dams, 812
Simple Friction Model for Scissor-Type Mobile Structures, 175

Friction coefficient, hydraulic
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985

Friction factor
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535
Design of a Submarine Oil Pipeline, 1038

Friction resistance
Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491

Frost heave
Frost Action in a Hydrophobic Material, 49
Frost Heave Induced Mechanics of Buried Pipelines, 488

Frost penetration
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Froude number
Critical Depth, Velocity Profiles, and Averaging, 610
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Frozen soils
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Frost Action in a Hydrophobic Material, 49
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151

Fuel costs
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146

Fuel economy
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146

Full-scale tests
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
Joint Effects on Behavior of Transmission Towers, 845
Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861
Ultimate Load Capacity of Single Steel Angles, 821

Functional analysis
Step-Function Response of Muskingum Reach, 609

Funding allocations
Engineering Education for Competitive International Economy, 799
Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

Furrow irrigation
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652
Erosion and Sedimentation Processes on Irrigated Fields, 650
Furrow Irrigation Erosion Lowers Soil Productivity, 651
Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600
Optimal Management Strategies for Cutback Furrow Irrigation, 662
Overview of Soil Erosion From Irrigation, 649
Reliability of Optimized Furrow-Infiltration Parameters, 641
Spatial and Seasonal Variation of Furrow Infiltration, 585
Transient Infiltration from Cavities. I: Theory, 612
Transient Infiltration from Cavities. II: Analysis and Application, 613

Fuzzy sets
Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991
Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091
Pricing Construction Risk: Fuzzy Set Application, 127

Gas flow
Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Gas production
Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370

Gas recovery
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147
Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373

Gates
Analysis of Rectangular Side Sluice Gate, 656
DACL System Dynamic Performance. I: Response-Prediction Analysis, 583
DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Gaussian distribution
Irregular Wave-Induced Velocities in Shallow Water, 1172

Gaussian process
Non-Gaussian Properties of Second-Order Random Waves, 168
Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167

Geodesy
Second-Order Design: Shooting for Maximum Reliability, 1021

Geodetic surveys
Using GPS Results in True 3-D Coordinate System, 1014

Geographic information systems
Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72
Application of GIS Network Routines for Water Flow and Transport, 1114
Bridge Planning Using GIS and Expert System Approach, 66
Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041
Computing in Civil and Building Engineering, 1346
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68
Development and Application of Expert Geographic Information System, 69
Engineering Hydrology, 1354
Expert Geographic Information System for Texas Water Planning, 1111
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357
Geographic Information Systems in Urban Stormwater Management, 1113
Getting to the Nonpoint Source with GIS, 1240
GIS and Storm-Water Management, 1278
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67
Implementation of GIS for Water Resources Planning and Management, 1112
Infrastructure: Planning and Management, 1365
Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107
Integrated Hydrologic Modeling with Geographic Information Systems, 1108
Microcomputers in Transportation, 1372
Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109
Potential Applications of Geographic Information Systems to Construction Industry, 85
Review of GIS Applications in Hydrologic Modeling, 1115
Small-Government GIS, 1243
Spatial Data Models for Managing Subsurface Data, 65
Toward Spatial Decision Support Systems in Water Resources, 1110
Transportation Hazard Analysis in Integrated GIS Environment, 1044
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646
Water-Distribution GIS from Fragmented and Incomplete Information, 71
Water-Quality Modeling with EPA Reach File System, 1116
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Geological anomalies
Site Exploration Strategy for Geologic Anomaly Characterization, 385

Geology
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380

Geometric nonlinearity
Analysis of Laminated Glass Units, 895

Geometry
Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032
Eccentric Connection Design: Geometric Approach, 839
Effect of Bank Stability on Geometry of Gravel Rivers, 574
Geometric Design Projects for Highways: An Introduction, 1358
Incipient Hydraulic Jump at Channel Junctions, 516
Octree Subdivision of Building Elements, 75

Geomorphology
Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562

Geophysical surveys
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67

Georgia
Rocky Mountain Hydro, 1231

Geosynthetics
Geosynthetics Conquer the Landfill Law, 1301
Geotechnical Practice in Dam Rehabilitation, 1359
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Geotechnical engineering
Banking on a Bridge, 1219
Civil Engineering in the Oceans V, 1332
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Getting Along: The Geotech and the CM, 1256
Kalman Filter—Finite Element Method in Identification, 159

Geotechnical investigations
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67

Geotextiles
Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484

Girders
Minimum-Weight Design of Continuous Composite Girders, 879
Optimum Design of Unstiffened Built-Up Girders, 963
Postbuckling and Hysteresis Models of Open-Web Girders, 853

Glass
Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830
Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856
Structural Behavior of Architectural Laminated Glass, 817
Ups and Downs in Chicago, 1302

Glass plates
Analysis of Laminated Glass Units, 895
Determination of Load Sharing in Insulating Glass Units, 170

Global positioning
Application of GPS Positioning to Management of Mobile Operation, 1019
Attitude Determination with Ashtech 3-D Direction Finding System, 1015
GPS—Rapid Solutions for Transportation Management, 1016
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025
Using GPS Results in True 3-D Coordinate System, 1014

Goals
Short-Term Goal Setting for Construction, 119

Golden Gate Bridge
Seismic Retrofitting: Spending to Save, 1203

Government agencies
Housing Linkage Fees: Lessons for Los Angeles, 1096
Standardizing Scheduling Data Exchange, 94

Government policies
Can the U.S. Compete?, 1315
The 'Criminalization' of Government Procurement, 1217
Land-Grant Policy and Engineering Education, 805
New Paradigm for Coordination in Water Industry, 1138

Government role
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Privatization Takes Its Toll, 1197

Graduate students
Collaboration in the Engineering Classroom, 791

Graduate study
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774
New Course in Management of Cold Regions Construction, 50

Grain size
Critical Shear Stress of Natural Sediments, 522
Dependence of Coefficient K on Grain Size, 1180
Washout of Grains from Filtered Sand and Gravel Materials, 376

Granular materials
Prediction of Bedding Intrusion into Low-Strength Subgrades, 396

Granular media
Instability of Granular Soils Under Strain Path Testing, 429
One-Dimensional High-Pressure Compression of Granular Media, 374
Role of Suspension Polydispersivity in Granular Media Filtration, 308

Seismic Bearing Capacity and Settlements of Foundations, 414
Stability of Granular Materials in Postpeak Softening Regime, 155
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Graphic techniques
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434

Gravel
Critical Shear Stress of Natural Sediments, 522
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Incipient Motion of Sand-Gravel Sediment Mixtures, 577
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Surface Sampling in Gravel Streams, 521

Gravity
Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513

Great Britain
London Linkage, 1258

Great Lakes
Invasion of the Zebra Mussels, 1233

Greens function
Approximate Green's Function for Surface Foundations, 464
Green's Functions for Transversely Isotropic Elastic Half Space, 251
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184

Grid systems
Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453
Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109

Ground motion
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244
Finite Element Analyses of HDR-4 Excavation, 13
Lifelike Model, 1241
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Simulating Seasonal Ground Movement in Unsaturated Clay, 446
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481

Ground water
Application of SHE for Irrigation-Command-Area Studies in India, 582
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542
Design Charts for Double-Walled Cofferdams, 386
Estimation and Optimization of Transient Seepage with Free Surface, 655
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67
Hydrocarbon Exclusion from Ground Water During Freezing, 344
Integrated Hydrologic Modeling with Geographic Information Systems, 1108
Movement of Ground Water in Converging Aquifer, 602
New Wells Safeguard Scenic Tahoe, 1234
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133
Probabilistic Screening of Ground-Water Contaminants, 315
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Ground-water chemistry
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587

Ground-water flow
Engineering Hydrology, 1354
Maximum Saturated Depth Over Landfill Liner, 313

Ground-water management
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Ground-water pollution
MSA for VOC Removal, 1216
A Natural Cleanup, 1213
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332
Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333
Water-Table Correction Factors to Applied Gasoline Contamination, 334

Ground-water quality
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587
Nitrate Leaching under Irrigated Corn, 620
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300
Probabilistic Screening of Ground-Water Contaminants, 315
Spatial Data Models for Managing Subsurface Data, 65
Subsurface Drainage System Design and Drain Water Quality, 619

Ground-water recharge
Evaluating Artificial Recharge Needs of Aquifer, 1137
Runoff As A Resource, 1286

Ground-water supply
New Wells Safeguard Scenic Tahoe, 1234

Grouting
EPB Shield Tunneling in Mixed Face Conditions, 472
Slip-Lining Solution, 1288

Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Growth projections

Growth Management in the City of San Diego: Planning the Future Now, 1095

Hawaii: Growth, Government, and Economy, 1094

Root Growth Simulation Model Under Specified Environment, 648

Guidelines

Checklist of Critical Success Factors for Building Projects, 679

Finding Your Way through Conflict, 671

The Proof is in the Pavement, 1267

Shotcrete for Underground Support VI, 1382

Guideway systems

Traversing the Terminals, 1269

Guideways

Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943

Gulf of Mexico

Coastlines of the Gulf of Mexico, 1340

Gullies

Criterion Delineating the Mode of Headcut Migration, 494

Gusts

Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825

Gust Buffeting. II: Dynamic Alongwind Response, 826

Half space

Approximate Green's Function for Surface Foundations, 464

Green's Functions for Transversely Isotropic Elastic Half Space, 251

Handicapped passengers

Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

Harbor engineering

Probing the Port of Los Angeles, 1196

Harbor structures

Probing the Port of Los Angeles, 1196

Harbors

Probing the Port of Los Angeles, 1196

Hawaii

Hawaii: Growth, Government, and Economy, 1094

Hazardous materials

Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043

Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041

Hazmat Transport Risks: Societal and Individual Perspectives, 1039

Lead is a Four-Letter Word, 1257

Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042

Transportation Hazard Analysis in Integrated GIS Environment, 1044

Hazardous waste

Estimating Emissions of 20 VOCs. I: Surface Aeration, 365

Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366

Measurement of Effective Diffusivities in Solidified Wastes, 299

Hazardous waste sites

Data Validation Practices and Risk Assessment, 1214

Sampling Sediment on a Complex Site, 1212

STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Superfund: New Leadership, Old Problems, 1210

Head loss

Changes in Entrance Resistance of Subsurface Drains, 624

Comprehensive Open-Channel Expansion Transition Design, 580

Hydraulics of Center-Pivot Laterals, 621

Hydraulics of Irrigation Laterals: Comparative Analysis, 586

Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144

Particle Size and Chemical Effects on Contact Filtration Performance, 331

Role of Suspension Polydispersivity in Granular Media Filtration, 308

Slow Sand Filtration of Secondary Effluent, 338

Health hazards

Analysis of Back Injuries in Construction, 118

Heat exchangers

Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137

Heat transfer

Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921

Design of a Submarine Oil Pipeline, 1038

Heat treatment

Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856

Study on Residual Stress Relief of Welded Structural Steel Joints, 715

Heated water

Real-Time Optimal Stochastic Control of Power Plant River Heating, 135

Heavy metals

Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350

Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321

Helixes

Estimation of Uplift Capacity of Helical Anchors in Clays, 394

Herbicides

Glyphosate Removal from Drinking Water, 368

Heuristics
Expert System for Optimum Design of Concrete Structures, 59
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337

High strength bolts
Tests of Fire-Resistant Bolts and Joints, 983

High strength concretes
Cyclic Behavior of Moderately Deep HSC Beams, 951
Fatigue Behavior of High-Performance Concrete, 703

High strength steel
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979

High technology
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374

Highway construction
Analysis of Highway Project Construction Claims, 748
Arches For A Parkway, 1290
Designing Private Funding Programs for Public Highways, 1098
Driving Under a Construction Site, 1224
Privatization Takes Its Toll, 1197
Recycled Roads, 1222

Highway costs
Designing Private Funding Programs for Public Highways, 1098

Highway design
Effect of Vehicle Length on Passing Operations, 1046
Lateral Clearance Needs on Compound Horizontal Curves, 1034
Tying Up The Artery, 1295
Unified Design of Horizontal Circular Curves, 1033
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Highway engineering
Geometric Design Projects for Highways: An Introduction, 1358
Pioneer Highway, 1250

Highway maintenance
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055
Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029

Highway management
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063
GPS—Rapid Solutions for Transportation Management, 1016

Highway planning
Bridge Planning Using GIS and Expert System Approach, 66
Decision Analysis of Alternative Highway Alignments, 1049
Duration and Frequency of Seasonal Traffic Counts, 1051
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Highway safety
Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042
Vehicle Impact Simulation, 1067

Highways
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060
Evaluating the Capacity of Freeway Weaving Sections, 1052
Mathematics of Concrete Scaling, 716
Optimal Control of Freeway Corridor, 1061
Pioneer Highway, 1250
Waste Products as Highway Materials in Flexible Pavement System, 1056

Historic sites
Performance of Historic Adobe Structure, 747
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Seismic Retrofitting: Spending to Save, 1203

History
Collapse of Ashtabula Bridge on December 29, 1876, 742
History of Steel Beam-Column Design, 835
Land-Grant Policy and Engineering Education, 805
Landmark American Bridges, 1367
The Mightiest of Them All: Memories of Grand Coulee Dam, 1373
Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Holes
Delamination Characteristics around Hole in Laminates with Softening Strip, 29

Holland
Dutch Globetrotting Pays Off, 1321

Hollow sections
Blind Bolting W-Shape Beams to HSS Columns, 1002
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Honduras
Comparison of Construction Safety Codes in United States and Honduras, 115

Hong Kong
Hong Kong's Wastewater Underground, 1281
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114

Hoppers
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158

Horizontal drains
Drilling with Direction, 1271

Horizontal loads
Anisotropy Studies on Cuboidal Shear Device, 436

Housing
Classification of Maintenance Costs in Scottish Housing Associations, 750
Growth Management in the City of San Diego: Planning the Future Now, 1095
Hawaii: Growth, Government, and Economy, 1094
Housing Linkage Fees: Lessons for Los Angeles, 1096

Population Estimation of City from Aerial Photographs: Riyadh Case, 1100
Twenty-First Century Timber Engineering, 1389

Human behavior

Adult-Development Perspective for Managing Professionals, 680
Dynamic Communication for Engineers, 1353
Finding Your Way through Conflict, 671
Modeling Human Performance in Reinforced Concrete Beam Construction, 81
Spotting Specs Offenders, 1209

Human factors

Human Factors in Civil and Geotechnical Engineering Failures, 388
Human Factors in Introducing On-Site Construction Automation, 131
Methods of Motivating for Increased Productivity, 672

Human-computer interaction

Development and Application of Expert Geographic Information System, 69
Speech-Based Data-Entry Systems for Construction, 73

Humidity

Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Stochastic Drying and Creep Effects in Concrete Structures, 822

Hydration

Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147

Hydraulic conductivity

Changes in Entrance Resistance of Subsurface Drains, 624
Compacted Clay Liners and Covers for Arid Sites, 387
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345

Hydraulic design

Hydraulic Design of Flume Aqueducts, 509
Hydraulic Design of Reversible Flow Trashracks, 1363
Reliability and Uncertainty Analyses in Hydraulic Design, 1379

Hydraulic engineering

Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360

Hydraulic jump

Characteristics of B-Jump with Different Toe Locations, 549
Computer Modeling of Side-Flow Weirs, 653
Hydraulic Jumps in Sediment-Driven Bottom Currents, 559
Incipient Hydraulic Jump at Channel Junctions, 516

Hydraulic models

Description and Evaluation of Program MODIS, 637
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552

Hydraulic networks

Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503 .

Hydraulic pressure

Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Hydraulic structures

Energy Dissipation on Stepped Spillways, 529
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511
Reliability and Uncertainty Analyses in Hydraulic Design, 1379
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605
Strength Design for Reinforced-Concrete Hydraulic Structures, 1385

Hydraulics

Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593
Computer Modeling of Side-Flow Weirs, 653
Description and Evaluation of Program CANAL, 635
Description and Evaluation of Program: DUFLOW, 636
Description and Evaluation of Program USM, 633
Erosion and Sedimentation Processes on Irrigated Fields, 650
Hydraulic Engineering '93, 1364
Hydraulics of Center-Pivot Laterals, 621
Hydraulics of Irrigation Laterals: Comparative Analysis, 586
Incipient Hydraulic Jump at Channel Junctions, 516
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369
Measuring Water in Trapezoidal Canals, 592
Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547
Modeling Pipe Networks Dominated by Junctions, 550
Numerical Methods Used to Model Unsteady Canal Flow, 628
Protection Against Scour at SAF Stilling Basins, 501
Report on Ship Channel Design, 1380
Stochastic Model of Particulate Transport in Porous Medium, 543
Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505
Waterpower '93, 1393

Hydrocarbons

Hydrocarbon Exclusion from Ground Water During Freezing, 344
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332

Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Hydrodynamic pressure

Dynamic Pressure of Water and Sediment on Rigid Dam, 232

Hydrodynamics

Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163

Calculation of Compound-Open-Channel Flow, 578

Civil Engineering in the Oceans V, 1332

Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47

Hydrodynamic Behavior of Compound Rectangular Open Channels, 515

Identification of Furrow Intake Parameters from Advance Times and Rates, 601

Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170

Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153

Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560

Round Buoyant Jet Entering Shallow Water in Motion, 575

Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Washout of Grains from Filtered Sand and Gravel Materials, 376

Wave Diffraction Through Submerged Breakwaters, 1183

Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Hydroelectric power

Waterpower '93, 1393

Hydroelectric power generation

Rocky Mountain Hydro, 1231

Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Hydroelectric powerplants

Compendium of Pumped Storage Plants in the United States, 1344

Interactive Computer Graphics for Expert-System Verification, 1134

Rocky Mountain Hydro, 1231

Waterpower '93, 1393

Hydrogen sulfide

Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373

Hydrogeology

Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625

Hydrographs

Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104

Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140

Regionalized Partial-Duration Balanced-Hydrograph Model, 657

Hydrologic models

DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68

Grouped Response Units for Distributed Hydrologic Modeling, 1118

Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107

Integrated Hydrologic Modeling with Geographic Information Systems, 1108

A New Point Estimate Method for Water Resources Modeling, 572

Regionalized Partial-Duration Balanced-Hydrograph Model, 657

Review of GIS Applications in Hydrologic Modeling, 1115

Hydrology

Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72

Asymptotic Determination of Runoff Curve Numbers from Data, 604

Conditional-Yield Operating Rules for Low-Flow Management, 1120

Criteria for Evaluation of Watershed Models, 611

Engineering Hydrology, 1354

Grouped Response Units for Distributed Hydrologic Modeling, 1118

Implementation of GIS for Water Resources Planning and Management, 1112

Land Use, Climate and Water Supply, 1145

Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369

Two-Dimensional Water Flood and Mudflow Simulation, 507

Hydrometeorology

Real-Time Optimal Stochastic Control of Power Plant River Heating, 135

Hydrostatic pressure

Discharge Prediction in Smooth Trapezoidal Free Overfall, 595

Hyperbolic cooling towers

Inelastic Behavior of Hyperbolic Cooling Tower, 933

Hysteresis models

Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854

Postbuckling and Hysteresis Models of Open-Web Girders, 853

I beams

Simple Method to Stabilize I-Beams Against Lateral Buckling, 966

Ice

Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47

Notch Sensitivity of First-Year Sea Ice, 226

Proportional Strain Tests of Fresh-Water Ice Rubble, 46

Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291

Ice cover

Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45

Model Study of a Cable-Moored Conical Platform, 44

Wave Propagation in Ice-Covered Channels, 546

Ice disintegration

Wave Propagation in Ice-Covered Channels, 546

Ice formation
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Ice mechanics
Numerical Modeling of Transient Creep in Polycrystalline Ice, 268
Proportional Strain Tests of Fresh-Water Ice Rubble, 46

Icebreakers
Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45

Identification
Damage Detection in Composite Materials Using Identification Techniques, 39
Kalman Filter—Finite Element Method in Identification, 159
Seismic Response of Eccentrically Braced Tall Building, 872

Image analysis
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447
Analysis of Segmentation Algorithms for Pavement Distress Images, 1083
Automating Inspection of Highway Pavement Surfaces, 1027
Digital Image Processing: Techniques and Applications in Civil Engineering, 1351
Imaging the Future, 1306
Phototriangulation Using CCD Camera in Close-Range Environment, 1017
Primitive-Based Classification of Pavement Cracking Images, 1054

Images
Digital Image Processing: Techniques and Applications in Civil Engineering, 1351
Imaging the Future, 1306

Impact
Free Rocking of Prismatic Blocks, 231
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Tests and Ratings of Short-Span Steel Bridges, 928

Impact forces
Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

Impact loads
Classification of Breaking Wave Loads on Vertical Structures, 1169

Impact tests
Modal Identification of Cable-Stayed Pedestrian Bridge, 997

Impacts
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590

Impedance
Dynamic Tests of Pipe Pile in Saturated Peat, 467
Impedance Functions of Piles in Inhomogeneous Media, 458

Impellers
Reservoir Destratification via Mechanical Mixers, 519

Imperfections
New Approach to Buckling of Imperfection-Sensitive Structures, 198
On Loads Equivalent to Geometrical Imperfections in Shells, 158
Postbuckling and Hysteresis Models of Open-Web Girders, 853

Impingement
Free Rocking of Prismatic Blocks, 231

Implementation
Applying Total Quality Management to Design and Construction, 686
Implementation of GIS for Water Resources Planning and Management, 1112
Implementing TQM in Engineering and Construction, 695
Managing Implementation of Change, 687

Impulsive loads
Transient Lamb's Solution for Surface Strip Impulses, 290

In situ tests
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Wave Equation Parameters from Driven-Rod Test, 440

Incineration
Manufacture of Cement from Sewage Sludge, 697
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425

Incinerators
A Solid Waste Solution, 1251

Incipient motion
Incipient Motion of Sand-Gravel Sediment Mixtures, 577

Inclusions
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Indexing
Expansion Potential According to *Uniform Building Code*, 442

India
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740

Indonesia
Governmental Priorities in Irrigation Project Selection in Indonesia, 1125

Industrial relations
New Paradigm for Coordination in Water Industry, 1138

Industrial wastes
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300
Waste Products as Highway Materials in Flexible Pavement System, 1056

Inelastic action
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Effect of Slab on Inelastic Response of R/C Buildings, 883
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914

Infiltration
Capillary-Tube Infiltration Model, 617
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555
Evaluation of In-Place Wetting Using Soil Suction Measurements, 428
Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Modeling Subsurface Drainage and Surface Runoff with WEPP, 642
Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600
Optimal Management Strategies for Cutback Furrow Irrigation, 662
Reliability of Optimized Furrow-Infiltration Parameters, 641
Spatial and Seasonal Variation of Furrow Infiltration, 585
Stability of Shale Embankments, 381
Transient Infiltration from Cavities. I: Theory, 612
Transient Infiltration from Cavities. II: Analysis and Application, 613

Infiltration rate
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590

Infinite elements
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151

Inflow
Diagnostic Checking in Stochastic Dynamic Programming, 1131
Step-Function Response of Muskingum Reach, 609

Information management
Advanced Construction Technology System—ACTS, 98
Computer-Integrated Design Drawings and Construction Project Plans, 126
Enhancing Value of Environmental Data: Data Lineage Reporting, 298
HyperDocument Model for Design Standards Documentation, 63
Information Management Power Station Construction at Stanwell, 667
Knowledge Representation and Processing in Relational Data Base, 64
Object-Oriented Finite Element Analysis Using EER Model, 962
Project Information Management System—Another Approach, 665
Tying Up The Artery, 1295

Information retrieval
HyperDocument Model for Design Standards Documentation, 63
Knowledge Representation and Processing in Relational Data Base, 64

Information science
Infratechnologies: Tools For Innovation, 1297

Information systems
Information Management Power Station Construction at Stanwell, 667
Infratechnologies: Tools For Innovation, 1297
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Project Information Management System—Another Approach, 665
Standardizing Scheduling Data Exchange, 94

Infrared analysis
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Infrastructure
Back to Iran, 1322
Dutch Globetrotting Pays Off, 1321
In Search of Better Load Ratings, 1275
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Infrastructure Construction: Effect of Social and Environmental Regulations, 790
Infrastructure, IFC-Style, 1311
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Infrastructure: Planning and Management, 1365
Infrastructure-Management-System Analysis, 1090
Innovation in Repair Techniques of Concrete Structures, 1366
Lost & Found: Comeback at the IDB, 1316
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375
Pipeline Infrastructure II, 1376
Plastics Composites for 21st Century Construction, 1377
Private Financing for Infrastructure, 1312
South Africa at the Crossroads, 1323
Supply-Side Solutions, 1225

Vietnam: Worth Looking Into, 1319

Injection

Slip-Lining Solution, 1288

Injuries

Analysis of Back Injuries in Construction, 118

Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777

Innovation

Airport Pavement Innovations—Theory to Practice, 1325

Builders as Sources of Construction Innovation, 113

Building the SSC: A Texas-Sized Challenge, 1263

Deliverance, 1200

Management, Operation and Maintenance of Irrigation and Drainage Systems, 3

Managing for Creativity and Innovation in A/E/C Organizations, 690

Managing Implementation of Change, 687

Supply-Side Solutions, 1225

Technology in Marine Construction Firms, 90

Water Management in the '90s: A Time for Innovation, 1392

Inorganic contaminants

Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625

Inspection

Automating Inspection of Highway Pavement Surfaces, 1027

Modeling Human Performance in Reinforced Concrete Beam Construction, 81

Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164

Installation

Steel Penstocks, 1384

Trenchless Track Record, 1274

Institutional constraints

Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638

Instruction

Developing Competent Civil Engineering Writers, 765

Instrumentation

Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453

Infrastructure: Planning and Management, 1365

Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375

Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486

Structural Response of Full-Scale Concrete Box Culvert, 989

Triple Plate Balanced Resistance Water-Level Gauge, 517

Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158

Insulation

Cracking in Exterior Insulation and Finish Systems, 737

Damage to Base of LNG Tanks from Blast Loading: Case Study, 746

Determination of Load Sharing in Insulating Glass Units, 170

Intake structures

Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Intakes

Invasion of the Zebra Mussels, 1233

Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Integral equations

Rational Mechanics of Axial Soil-Pile Interaction, 196

Intelligent vehicle highway systems

IVHS: The Invisible Revolution, 1221

Real-Time Traffic Diversion Model: A Conceptual Approach, 1062

Interaction models

Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476

Interactions

Documented Constructability Savings for Petrochemical-Facility Expansion, 735

Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244

Interaction of Axial and Lateral Pile Responses, 424

Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011

Probabilistic Assessment of Pile Interference, 405

Settlement of Pile Groups—Practical Approach, 460

Stability of Nonsymmetric Cross-Bracing Systems, 815

Interactive graphics

Computer-Based Environment for Wastewater Treatment Plant Design, 356

Interactive Computer Graphics for Expert-System Verification, 1134

XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Interactive systems

Computer-Integrated Design Drawings and Construction Project Plans, 126

Development and Application of Expert Geographic Information System, 69

Experiencing Computer Integrated Construction, 99

Geographic Information Systems in Urban Stormwater Management, 1113

Integrated GIS and Hydrologic Modeling for Countywide Drainage Study, 1107

Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60

Prototype Integrated Cost and Schedule Control System, 61

Interagency cooperation

Holistic Approach to Irrigation Management in Developing Countries, 603

Interchanges

Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032

Interconnected systems

Dynamic Equations for System of Irregularly Shaped Plane Bodies, 280

Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858

Interfaces

Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165

Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166

Improved Method for Determining Interfacial Stresses in Composites, 21

Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964

Interferometry

Development of Interferometer for Acoustic Emission Testing, 285

Internal pressure

Determination of Load Sharing in Insulating Glass Units, 170

International compacts

Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781

Sustainable Development and National Laws, 784

World Engineering Partnership for Sustainable Development, 783

International development

ASCE Activities Become Global Issues, 786

Can the U.S. Compete?, 1315

Engineering Sustainable Development, 1279

The Financing Fray, 1320

Going International: Profit or Peril?, 1309

Infrastructure, IFC-Style, 1311

World Bank Update, 1318

International factors

Bringing Finance to the Table, 1314

Engineering Education for Competitive International Economy, 799

Going International: Profit or Peril?, 1309

Intersections

Visibility Near Intersection Partially Obscured by Vegetation, 1066

Interstate highways

Accidents on Interstate Highways Caused by Blowing Dust, 743

Intrusion

Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531

Prediction of Bedding Intrusion into Low-Strength Subgrades, 396

Investments

Foreign Investment in Latin America: A Second Look, 1317

Ion exchange

Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355

Iowa

Landfill on Screen, 1244

Iran

Back to Iran, 1322

Iron

Organic Compounds in Ferrous Foundry Process Waste Leachates, 300

Irregular boundaries

Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571

Smooth Boundary Approximation for Directly Computing Irregular Area, 1020

Irrigation

Alfalfa Irrigation During Drought, 661

Aquifer Characteristics and Long-Term Ground-Water Levels, 588

Cal Poly Model Canal, 631

Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594

Control Method for On-Demand Operation of Open Channel Flow, 596

Critical Depth Equations for Irrigation Canals, 608

DACL System Dynamic Performance. I: Response-Prediction Analysis, 583

DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Holistic Approach to Irrigation Management in Developing Countries, 603

Irrrigation–Canal—Simulation Model Usage, 627

Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587

Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369

Microsystems Irrigation in Niger, West Africa, 647

Nitrate Leaching under Irrigated Corn, 620

Regional Irrigation Water Demand, 644

Root Growth Simulation Model Under Specified Environment, 648

Water Management in Arranged-Demand Canal, 598

Irrigation districts

Local Water, Local Control, 1253

Irrigation efficiency

Application of SHE for Irrigation-Command-Area Studies in India, 582

Management, Operation and Maintenance of Irrigation and Drainage Systems, 3

Microsystems Irrigation in Niger, West Africa, 647

Reduction of Deep Percolation and Drain Water, 622

Water Management in Arranged-Demand Canal, 598

Irrigation practices

Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652

Management, Operation and Maintenance of Irrigation and Drainage Systems, 3

Irrigation programs

Governmental Priorities in Irrigation Project Selection in Indonesia, 1125

Irrigation systems

Description and Evaluation of Program: DUFLOW, 636

Description and Evaluation of Program MODIS, 637

Description and Evaluation of Program USM, 633

Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503

Informed Use and Potential Pitfalls of Canal Models, 630
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605
Unique Problems in Modeling Irrigation Canals, 629
Unsteady-Flow Modeling of Irrigation Canals, 626

Irrigation water
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618
Saline Drain Water Reuse in Agroforestry Systems, 591

Isolators
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286

Isotherms
Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363

Isotropic material
Half-Plane Crack Under Normal Load: Complete Solution, 281
Numerical Analysis of Drained Direct and Simple Shear Tests, 485

Iteration
Blunder Detection and Data Snooping in LS and Robust Adjustments, 1023

Japan
Coastlines of Japan II, 1338
Experiencing Computer Integrated Construction, 99
Harry Seed, Liquefaction & the Gravel Drain, 1303
Inside the System: The Japanese Construction Company, 1313
Japanese Building Design and Construction Technologies, 798
Keeping Cables Calm, 1283

Job analysis
Classification of Maintenance Costs in Scottish Housing Associations, 750
Employee Involvement in Engineering and Construction, 675
Testing and Counseling in Assisting Students in Career Selection, 766

Job satisfaction
Monitoring Well-Being of Civil Engineering Profession, 758
Motivating Technical Employees, 1229

Joint ventures
Private Financing for Infrastructure, 1312

Joints
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Experimental Study of Timber Trusses and Joints, 878
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188
Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189
Joint Effects on Behavior of Transmission Towers, 845
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078
Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712
RC Frame Connections Rehabilitated by Jacketing, 886
Tests of Fire-Resistant Bolts and Joints, 983

Joints, bonded
Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182

Jurisdiction
SITE CODE: Computer-Based Regulatory Information for Site Development, 1087

Kalman filter
Application of GPS Positioning to Management of Mobile Operation, 1019
Kalman Filter—Finite Element Method in Identification, 159

Karst
Sinkhole Damage to Masonry Structure, 738

Kinematic wave theory
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555

Kinematics
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025

Kinetics
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363

Knowledge acquisition
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55

Knowledge-based systems
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55
KBES for Design of Steel Structural Elements, 52
Knowledge Representation and Processing in Relational Data Base, 64
Knowledge-Based Design of Project-Procurement Process, 57
Knowledge-Based System for Design of Signalized Intersections, 2
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057
Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60
Nonmonotonic Reasoning in Design, 53
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062
Towards a Modeling Support System for Simulation of Water Quality, 70

Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Labor relations

Human Factors in Introducing On-Site Construction Automation, 131

Laboratory tests

Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740

Changes in Entrance Resistance of Subsurface Drains, 624

Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958

Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420

Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491

DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730

Energetic Bubble Plumes in Arbitrary Stratification, 532

Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166

Experimental Study of Timber Trusses and Joints, 878

Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346

Hydraulic Jumps in Sediment-Driven Bottom Currents, 559

Incipient Motion of Sand-Gravel Sediment Mixtures, 577

Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069

Investigation of Phosphate Mining Waste for Construction Materials, 714

Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401

Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037

Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170

Measuring Water in Trapezoidal Canals, 592

Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367

New Excitation System for Indoor Testing of Overhead Conductors, 145

Oxygen Transfer in Bubbly Turbulent Shear Flow, 493

RC Flat Slab–Column Subassemblages Under Lateral Loading, 915

Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035

Three-Dimensional Flow Structure at Open-Channel Diversions, 568

X-Bracing Anchorage Connection, 996

Lagoons

The Management of Coastal Lagoons and Enclosed Bays, 1368

Lagrange's equations

Dynamic Equations for System of Irregularly Shaped Plane Bodies, 280

Lagrangian functions

Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528

Lakes

Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301

Lake Destratification by Bubble-Plume Systems: Design Methodology, 512

Lake Water Temperature Simulation Model, 570

Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Vertical Distribution of Particles in Stratified Lake, 326

Laminar flow

Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531

Design of a Submarine Oil Pipeline, 1038

Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500

Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Laminated wood

Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901

Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859

Laminates

Analysis of Laminated Glass Units, 895

Delamination Characteristics around Hole in Laminates with Softening Strip, 29

Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210

Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923

Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924

Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41

Postbuckling Analysis of Stiffened Laminated Box Columns, 150

Laminating

Delamination Effect on Flutter of Homogeneous Laminated Plates, 34

Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856

Structural Behavior of Architectural Laminated Glass, 817

Land development

Reclaiming Clear-Cut Land, 1298

SITE CODE: Computer-Based Regulatory Information for Site Development, 1087

Land surveys

ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022

Smooth Boundary Approximation for Directly Computing Irregular Area, 1020

Land usage

Growth Management in the City of San Diego: Planning the Future Now, 1095

Hawaii: Growth, Government, and Economy, 1094

Interactive Dynamic Layout Planning, 97
Land Use, Climate and Water Supply, 1145
Multiobjective Land-Use Planning Model, 1088

Land usage planning
Multiobjective Land-Use Planning Model, 1088

Landfills
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340
Exchanging Wastes, 1287
Geosynthetics Conquer the Landfill Law, 1301
High-Tech Landfill Caps, 1235
Keller Canyon Fills a Need, 1280
Landfill on Screen, 1244
Maximum Saturated Depth Over Landfill Liner, 313
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Landforms
A Better Grade Of Grade, 1282

Landsat
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Landslides
Stability of Motions of Translational Landslides, 399

Laplace transform
Stress Analysis of Borehole in Poroelastic Medium, 220
Transient Lamb's Solution for Surface Strip Impulses, 290

Lasers
Use of Laser Targeting in Precise Machinery Surveys, 1018

Lateral forces
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Requirements for Lateral Bracing of Columns with Two Spans, 970
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977

Lateral loads
Behavior of Curtailed Wall-Frame Structures, 965
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967
Interaction of Axial and Lateral Pile Responses, 424
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459
Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712
Propagating Instabilities in Long Shallow Panels, 181
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379
Simple Method to Stabilize I-Beams Against Lateral Buckling, 966
Simplified Approach for Pile and Foundation Interaction Analysis, 461
Stress Distribution in Front Columns of High-Rise Buildings, 889
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Lateral pressure
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431
Structural Behavior of Architectural Laminated Glass, 817

Lateral stability
Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262

Lateral stress
Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471
Vertical Earth Loads on Buried Engineered Works, 403

Laterals
Analysis and Design of Trickle-Irrigation Laterals, 639
Hydraulics of Center-Pivot Laterals, 621
Hydraulics of Irrigation Laterals: Comparative Analysis, 586

Laterites
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037

Latin America
Foreign Investment in Latin America: A Second Look, 1317
Lost & Found: Comeback at the IDB, 1316

Lattices
Analysis of Multiple-Bay Frames Using Continuum Model, 834
Ultimate Load Capacity of Single Steel Angles, 821

Launching pads
Use Value Engineering Concepts for Spaceport Launching, 24

Laws
Ethics in Practice, 762

Layered soils
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Moving Load Response of Layered Soil. I: Formulation, 270
Moving Load Response of Layered Soil. II: Verification and Application, 271
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421

Layered systems
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Large-Strain Analysis of Reinforced Membranes, 294
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

Layout
Interactive Dynamic Layout Planning, 97

Leachates
Exchanging Wastes, 1287

Maximum Saturated Depth Over Landfill Liner, 313
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Leaching
Agronomic and Environmental Benefits of Water-Table Management, 658
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425
Nitrate Leaching under Irrigated Corn, 620
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300
Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350

Lead
Lead is a Four-Letter Word, 1257
Whose Risk Is It, Anyway?, 1285

Leadership
Empowering High-Performing People to Promote Project Quality, 683
Exploiting the Leadership Asset of the Engineer, 677
Resistance to Change: Why Your TQM Efforts May Fail, 692
Skills Required of Effective Project Managers, 676

Leakage
Detecting Leaks in Geomembranes, 1262
Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407
Water-Distribution GIS from Fragmented and Incomplete Information, 71

Least squares method
Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173
Improved Method for Determining Interfacial Stresses in Composites, 21
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025
Reliability of Optimized Furrow-Infiltration Parameters, 641
Stream Function Wave Theory with Profile Constraints, 1153

Legal factors
Analysis of Highway Project Construction Claims, 748
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760
Certificate of Merit in Civil Litigation, 789
Computer-Aided Liability, 1239
Construction Cost Factors in Nigeria, 124
The 'Criminalization' of Government Procurement, 1217
Defensible Performance Appraisals, 669
Strict Liability in Civil Engineering Practice, 770
Waterpower '93, 1393

Legislation
Commercial Growth Management Techniques in San Francisco, 1097
Keller Canyon Fills a Need, 1280
Privatization Takes Its Toll, 1197

Length
Effect of Vehicle Length on Passing Operations, 1046

Liability
Computer-Aided Liability, 1239
Professional Issues in Coastal Engineering, 787
Strict Liability in Civil Engineering Practice, 770
What's In It for Me?, 1310

Licensing
Mandatory Continuing Professional Development for Relicensing of Engineers, 796

Lifting
Computer-Aided Planning for Heavy Lifts, 111

Lime
Permeability Behavior of a Water Treatment Sludge, 474

Limestone
Speedy Backfilling for Old Mines, 1273

Limit analysis
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473
Eccentrically Connected Cleat Plates in Compression, 849
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Shear Strength of Reinforced Concrete Deep Beams, 937

Limit design
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007

Limit design method
LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976

Limit equilibrium
Numerical Evaluation of Terzaghi's N_γ, 410
Rational Polynomial Technique in Slope-Reliability Analysis, 487

Limit states
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Shakedown of Frames with Semirigid Connections, 903
X-Bracing Anchorage Connection, 996

Linear analysis
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Soil-Water Distribution under Trickle Source, 615

Linear functions
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
New Generation of Planning Structures, 93

Linear programming
Microcomputer Implementation of Pavement Network Optimization System, 78
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254

Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126
Optimal Operation of Multiple-Reservoir System, 1101
Shakedown of Frames with Semirigid Connections, 903

Linear systems
Step-Function Response of Muskingum Reach, 609

Liners
Detecting Leaks in Geomembranes, 1262
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Geosynthetics Conquer the Landfill Law, 1301
Maximum Saturated Depth Over Landfill Liner, 313
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402

Linings
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Shotcrete for Underground Support V, 1381

Liquefaction
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Cyclic Characterization of Liquefiable Sands, 482
Harry Seed, Liquefaction & the Gravel Drain, 1303
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406
Progressive Failure of Lower San Fernando Dam, 393
Project Velacs—Control Test Results, 452

Liquefied natural gas
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746

Liquid limit
Tropical Clays. I: Index Properties and Microstructural Aspects, 426

Liquids
Dynamic Response of Tank Containing Two Liquids, 179
Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475

Litigation
Certificate of Merit in Civil Litigation, 789
Contemporary Model of Civil Engineering Failures, 771
Spotting Specs Offenders, 1209

Littoral currents
Longshore Sand Transport Southeast of Bahia de Todos Santos, B.C. Mexico, 1182

Live loads
Effect of Truck Loads on Bridges, 1082
Structural Response of Full-Scale Concrete Box Culvert, 989

Load combinations
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842
Joint Effects on Behavior of Transmission Towers, 845
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172

Load distribution
Determination of Load Sharing in Insulating Glass Units, 170
Impact Studies of Multigirder Concrete Bridges, 942
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894
Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858
Stability of Pitched-Roof Frames in National Building Codes, 980
Tests and Ratings of Short-Span Steel Bridges, 928
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

Load duration
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843

Load factors
Public Safety—Is it Compromised by New LRFD Design Standards?, 876
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910

Load tests
Behavior of Large Bored Piles in Fuzhou, 408
Conical Test Load Measuring Compressibility, 435
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375
Plate-Load Tests of Collapsible Soils, 411
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Load tests, foundations
Design of Pile Foundations, 1350

Load transfer
Behavior of Large Bored Piles in Fuzhou, 408
Cyclic Response of Axially Loaded Pile Groups, 457
Pile Groups under Negative Skin Friction, 469
Rational Mechanics of Axial Soil-Pile Interaction, 196

Loading
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957
Deformation Analysis of Embankments, 448
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
Possible Ranges of End Slope for Cantilever Beams, 185
Shear Behavior of RC Structural Walls, 847

Loading history
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952

Loading rate
Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200
In Search of Better Load Ratings, 1275
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304

Loads
Behavior of Composite Timber-Concrete Floors, 982
Buckling Fire Endurance of Steel Columns, 904
Buckling of Elliptical Plates Under Uniform Pressure, 999
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156
Dynamic Damping of Payload Motion for Cranes, 120
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214
Experimental Study of Timber Trusses and Joints, 878
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Half-Plane Crack Under Normal Load: Complete Solution, 281
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916
Reliability-Based Design of Wood Members Subject to Ponding, 994
Second-Order Wave Loads on Planar Wavemakers, 1177
Serviceability Design in LRFD for Wood, 1012
Stability of Pitched-Roof Frames in National Building Codes, 980
Structural Response of Full-Scale Concrete Box Culvert, 989

Location
Characteristics of B-Jump with Different Toe Locations, 549
Microcomputer Model for Design and Location of Runway Exits, 1053
Moving an Engineering Firm: A Checklist, 673
Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024

Logistics
Cold Region Logistics Planning and Management, 43
Haul-Unit Performance, 121

Long waves
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167

Loss reduction
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652
Furrow Irrigation Erosion Lowers Soil Productivity, 651

Losses
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984

Louisiana
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659

Machine foundations
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254

Machinery
Use of Laser Targeting in Precise Machinery Surveys, 1018

Maintenance
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070
Infrastructure-Management-System Analysis, 1090
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
Pipeline Infrastructure II, 1376
Steel Penstocks, 1384

Maintenance costs
Classification of Maintenance Costs in Scottish Housing Associations, 750

Management
Adult-Development Perspective for Managing Professionals, 680
Civil Engineering for the Community, 1331
Cold Region Logistics Planning and Management, 43
Computer-Use Factors in Transportation Engineering Project Management, 76
Dynamic Communication for Engineers, 1353
Effective Management in Computerized SCADA System, 668
Engineering Women: A View From the Workplace, 663
Environmental Consulting Grows Up, 1211
Expert System Based Training for Emergency Management, 51
Exploiting the Leadership Asset of the Engineer, 677
Finding Your Way through Conflict, 671
Holistic Approach to Irrigation Management in Developing Countries, 603
Inside the System: The Japanese Construction Company, 1313
Listening to Research Clients, 803
Making the Leap, 1247
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3
Managing Implementation of Change, 687
Moving an Engineering Firm: A Checklist, 673
Practical Models for Organizational Assessment, 666
Professional Ethics Training for Engineering Firms, 775
Quality Improvement Experiences in E/A Firm, 682
Resistance to Change: Why Your TQM Efforts May Fail, 692
Techniques for Coordinating and Managing Growth, 1093
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130
Total Quality—Does it Work in Engineering Management?, 694
Win-Win Negotiating: A Professional's Playbook, 1394

Management methods
Applying Total Quality Management to Design and Construction, 686
The Denver Airport: Managing a Megaproject, 1236
Effective Total Quality Management (TQM) Process, 693

Employee Involvement in Engineering and Construction, 675
Empowering High-Performing People to Promote Project Quality, 683
Essential Tools of Total Quality Management, 684
Finding Your Way through Conflict, 671
Implementing TQM in Engineering and Construction, 695
Motivating Technical Employees, 1229
Runoff As A Resource, 1286
Total Quality Management at Construction Jobsites, 688
Total Quality—Does it Work in Engineering Management?, 694
TQM: A View from The Playing Field, 689

Management planning
Holistic Approach to Irrigation Management in Developing Countries, 603

Management style
Inside the System: The Japanese Construction Company, 1313
Managing for Creativity and Innovation in A/E/C Organizations, 690

Management systems
Infrastructure-Management-System Analysis, 1090
Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375
RMS: Research Management System, 681
Towards a Modeling Support System for Simulation of Water Quality, 70

Management training
Designing Executive-Development Programs for Engineering Managers, 678

Managers
Designing Executive-Development Programs for Engineering Managers, 678

Manganese
Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342

Manpower
Digger's Decline: A Fable for Civil Engineers, 792

Mapping
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659
Shell Finite Element Formulated on Shell Middle Surface, 266
Using GPS Results in True 3-D Coordinate System, 1014

Marine clays
Estimation of Uplift Capacity of Helical Anchors in Clays, 394

Marine engineering
Technology in Marine Construction Firms, 90

Marine terminals
MASSPORT Modernization, 1223

Market research
Framework for Assessment of Recycle Potential Applied to Plastics, 348

Marketing
Marketing Strategies for Engineers, 1370
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130

Markov chains
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141

Markov process
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912

Masonry
Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
Masonry Carries the Load, 1208
Masonry Productivity Forecasting Model, 91
Prototype Robotic Masonry System, 17
Sinkhole Damage to Masonry Structure, 738
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Mass
Comparative Study of Frequencies for Plates Carrying Mass, 202

Mass transport
Mass Transport in Wave Tank, 1152
Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355
Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541

Mat foundations
Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395

Materials
Construction Cost Factors in Nigeria, 124
Pressure Pipeline Design for Water and Wastewater, 1378
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383

Materials engineering
Shotcrete for Underground Support VI, 1382

Materials, properties
Characterization of Polyester Polymer and Polymer Concrete, 701
Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200
Plastic Potential, 1265
Thermomechanical Properties of Epoxy Mortars, 709
Three-Dimensional Model for Wood-Pole–Strength Predictions, 931

Materials testing
Thermomechanical Properties of Epoxy Mortars, 709

Mathematical models
Acidification Potential of Snowpack in Sierra Nevada, 12
Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395
Cr(III) in Activated Sludge, 306
Dynamic Compaction of Saturated Porous Columns, 241
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369
Effects of Wastewater Composition on Stability of UASB, 358
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337
Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407
Lunar-Base Construction Equipment and Methods Evaluation, 30
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581
Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547
Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560
Parametrically Induced Vibration in Concrete Columns, 218
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499
Rubber-Tire Particles as Concrete Aggregate, 729
Scattering of Water Waves by Vertical Cylinders, 1165
Sorption and Desorption of Dyes by Sulfonated Coal, 320
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819
Water-Quality Modeling with EPA Reach File System, 1116

Mathematical programming
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909

Mathematics
Automated Surface Wave Method: Inversion Technique, 445
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Numerical Methods Used to Model Unsteady Canal Flow, 628

Matrices, mathematics
Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274

Matrix analysis
Quality Function Deployment—System for Meeting Customers' Needs, 112

Matrix methods
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026

Meandering streams
Factors Affecting Conveyance in Meandering Compound Flows, 576
Meandering Water Rivulet, 567

Meanders
Meandering Water Rivulet, 567
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539

Measurement
Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324
ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360
Irregular Wave-Induced Velocities in Shallow Water, 1172
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511
Measurement of Oxygen Transfer in Clean Water, 1371
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
Measuring Water in Trapezoidal Canals, 592
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439

Measuring instruments
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360
Triple Plate Balanced Resistance Water-Level Gauge, 517

Mechanical properties
Recycling Plastics in Polymer Concrete for Construction Applications, 713

Mechanics
Reservoir Destratification via Mechanical Mixers, 519
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164

Mediation
Application of Computer Simulation in Resolving Construction Disputes, 102

Mediterranean Sea
Coastlines of the Mediterranean, 1341

Membranes
Cost Model for Low-Pressure Membrane Filtration, 347

Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186
Field Evaluation of Preformed Membranes, 1047
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Large-Strain Analysis of Reinforced Membranes, 294
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Ranking PVC Roofing Membranes Using Thermal Analysis, 702

Memoirs of deceased members
Burbank, Jr. Nathan C., 1395
Fisher, Gordon Page, 1396
Gorrill, William R., 1397
Jackson, George L., 1398
Maurseth, Raymond O., 1399
Mayer, Frederick Henry, 1400
O'Shea, Robert, 1401
Porter, Harris Carley, 1402
Smith, Richard James, 1403

Mesh generation
Cracking in Exterior Insulation and Finish Systems, 737
Selection of Random Field Mesh in Finite Element Reliability Analysis, 187

Metals
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335
Cr(III) in Activated Sludge, 306
Response of Long-Span Soil-Metal Structures, 836

Methane generation
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304

Methodology
Dynamic Along-Wind Response of Buildings: Comparative Study, 891
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33
Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Metric systems
Faculty Attitudes about Progress of Metrication, 776
Metric Design: It's Real, 1248

Mexico
Coastal Management in Mexico: the Baja California Experience, 1335
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854

Microbial activity
Microbial Ecology of Crown Corrosion in Sewers, 15
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354

Microcomputers
Computer Scheduling and Construction Specs, 1254
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360
Microcomputer Implementation of Pavement Network Optimization System, 78
Microcomputer Model for Design and Location of Runway Exits, 1053
Microcomputers in Transportation, 1372
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080

Microtunneling
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133

Microwave sensors
Technology Assessment and Development of Large Deployable Antennas, 18

Migration
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Mine wastes
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Mines
Speedy Backfilling for Old Mines, 1273

Minimum weight design
Minimum-Weight Design of Continuous Composite Girders, 879

Mining
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Shotcrete for Underground Support VI, 1382

Missouri River
Haunted by the Past, 1277

Mixing
Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249
Energetic Bubble Plumes in Arbitrary Stratification, 532
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512
Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325
Reservoir Destratification via Mechanical Mixers, 519
Round Buoyant Jet Entering Shallow Water in Motion, 575
Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Mixtures
Critical Shear Stress of Natural Sediments, 522
Incipient Motion of Sand-Gravel Sediment Mixtures, 577

Mobility
Geochemical Factors Affecting Trace Element Mobility, 645
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625
Simple Friction Model for Scissor-Type Mobile Structures, 175
Use Value Engineering Concepts for Spaceport Launching, 24

Modal analysis
Modal Identification of Cable-Stayed Pedestrian Bridge, 997

Simple Model for Optimal Control of Tall Buildings, 857

Model accuracy

Evaluation of Runoff and Erosion Models, 606

Informed Use and Potential Pitfalls of Canal Models, 630

Model analysis

Description and Evaluation of Program CANAL, 635

Description and Evaluation of Program MODIS, 637

Transient Infiltration from Cavities. II: Analysis and Application, 613

Model tests

Flood-Flow Frequency Model Selection in Southwestern United States, 1122

Model Study of a Cable-Moored Conical Platform, 44

Model verification

Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417

Evaluation of Runoff and Erosion Models, 606

Field Data for Verifying Canal Unsteady Flow Models, 632

Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189

Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Verification of Friction Model of Teflon Bearings under Triaxial Load, 819

Modeling

Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151

Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185

Analysis of Deep Excavation in Boston, 378

Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249

Analytical Framework for Minimizing Freeway-Incident Response Time, 1063

Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495

Application of SHE for Irrigation-Command-Area Studies in India, 582

Average-Bid Method—Competitive Bidding Strategy, 89

Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Capillary-Tube Infiltration Model, 617

Comparison of Physical Transport Processes in Noncohesive River Sediments, 303

Cyclic Characterization of Liquefiable Sands, 482

DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Effective Total Quality Management (TQM) Process, 693

Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349

Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244

Finite Element Analysis of Reinforced Concrete Structures II, 1355

Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45

Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640

Hydraulic Design of Reversible Flow Trashracks, 1363

Hydrodynamic Behavior of Compound Rectangular Open Channels, 515

Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638

Lifelike Model, 1241

Lumped-Parameter Approach to Stability Analysis, 273

Model-Based Planning: Scaled-Up Construction Application, 62

Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325

Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319

Modeling Human Performance in Reinforced Concrete Beam Construction, 81

Modeling Operational Activities in Object-Oriented Simulation, 56

Modeling Pipe Networks Dominated by Junctions, 550

Modeling School Utilization and Consolidation, 1089

Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355

Modeling Subsurface Drainage and Surface Runoff with WEPP, 642

Multiobjective Land-Use Planning Model, 1088

Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126

A New Point Estimate Method for Water Resources Modeling, 572

Nonlinear Finite Element Analysis of RC Slab Bridge, 811

Octree Subdivision of Building Elements, 75

Optimal Control of Freeway Corridor, 1061

Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223

Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838

Predicting Pollution, 1228

Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38

Problematics in Formulation of Wind-Force Models for Bridge Decks, 229

Project-Level Model Process for Implementing Constructability, 132

Resource-Oriented Modeling and Simulation in Construction, 117

Seismic Performance of Joist-Pocket Connections. I: Modeling, 974

Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541

Third-Generation Wind-Wave Model for Use on Personal Computers, 1147

Toward Spatial Decision Support Systems in Water Resources, 1110

Towards a Modeling Support System for Simulation of Water Quality, 70

Triple Plate Balanced Resistance Water-Level Gauge, 517

Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Models

Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335

Analyses of Canadian Air Travel Demands, 1048

Asymptotic Solutions and Behavior of Outfall Flumes, 524

Batch Biological Treatment of Inhibitory Substrates, 352

Border Advance Using Improved Volume-Balance Model, 654

Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911

Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136

Cost Model for Low-Pressure Membrane Filtration, 347

Criteria for Evaluation of Watershed Models, 611

Damage Model for Concrete Using Bounding Surface Concept, 260

Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075

Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824

Field Data for Verifying Canal Unsteady Flow Models, 632

Field Tests of Anchors in Clay. I: Description, 465

Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466

Flood-Flow Frequency Model Selection in Southwestern United States, 1122

General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468

Geographic Information Systems in Urban Stormwater Management, 1113

HyperDocument Model for Design Standards Documentation, 63

Informed Use and Potential Pitfalls of Canal Models, 630

Interaction of Axial and Lateral Pile Responses, 424

Interactive Dynamic Layout Planning, 97

Irrrigation–Canal—Simulation Model Usage, 627

Land Use, Climate and Water Supply, 1145

Mathematics of Concrete Scaling, 716

Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884

Model of Career Choice for Craftworkers, 87

Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Models of Viscoelasticity with Complex-Order Derivatives, 234

New Perspectives on Soil Creep, 404

Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722

Nonmonotonic Reasoning in Design, 53

Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109

Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563

Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140

Practical Models for Organizational Assessment, 666

Probabilistic Screening of Ground-Water Contaminants, 315

Properties of Incremental Solutions for Dissipative Material, 186

Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029

Regionalized Partial-Duration Balanced-Hydrograph Model, 657

Stability Functions for Members with Semirigid Joint Connections, 833

STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291

Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Transient Infiltration from Cavities. I: Theory, 612

Transient Infiltration from Cavities. II: Analysis and Application, 613

Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332

Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219

Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Vertical Distribution of Particles in Stratified Lake, 326

Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Modular structures

Knowledge-Based Approach to Modular Construction Decision Support, 88

Use Value Engineering Concepts for Spaceport Launching, 24

Modulus of elasticity

Uniaxial Bending of Columns, 873

Mohr-Coulomb theory

Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219

Moisture content

Accidents on Interstate Highways Caused by Blowing Dust, 743

Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370

Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730

Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706

Recyclability of Moisture Damaged Flexible Pavements, 731

Moment distribution

Minimum-Weight Design of Continuous Composite Girders, 879

Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007

Moments

Approximate Moment-Curvature Relationships for Slender Columns, 868

Effect of Truck Loads on Bridges, 1082

Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214
Moment-Curvature Relationships for Dented Tubular Sections, 852
Moments in Deck Slabs Due to Cantilever Loads, 907
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869
Slenderness of Columns in Braced Frames, 998

Momentum transfer
Critical Depth, Velocity Profiles, and Averaging, 610

Monitoring
Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Beach Nourishment Engineering and Management Considerations, 1329
Coastal Engineering Considerations in Coastal Zone Management, 1333
Coastal Management in Mexico: the Baja California Experience, 1335
Coastal Zone '93, 1336
Coastlines of Canada, 1337
Coastlines of Japan II, 1338
Coastlines of the Black Sea, 1339
Coastlines of the Gulf of Mexico, 1340
Coastlines of the Mediterranean, 1341
Coastlines of the Southern North Sea, 1342
Coastlines of Western Africa, 1343
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721
Deltas of the World, 1347
Fit to Drink, 1232
Geotechnical Practice in Dam Rehabilitation, 1359
In Search of Better Load Ratings, 1275
Infrastructure: Planning and Management, 1365
The Management of Coastal Lagoons and Enclosed Bays, 1368
Monitoring Well-Being of Civil Engineering Profession, 758
Neural Networks Trained by Analytically Simulated Damage States, 58
Pipeline Infrastructure II, 1376
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158

Monte Carlo method
Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896
Multimodal Simulation Method for System Reliability Analysis, 217
Probabilistic Cost Estimating with Subjective Correlations, 84

Moon
Lunar-Base Construction Equipment and Methods Evaluation, 30

Moorings
Model Study of a Cable-Moored Conical Platform, 44

Morphology
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539

Mortars
Thermomechanical Properties of Epoxy Mortars, 709

Motion
Motion and Path Control for Robotic Excavation, 16

Motion effects
Structural and Orbital Conditions on Response of Large Space Structures, 23

Motivation
Employee Involvement in Engineering and Construction, 675
Managing for Creativity and Innovation in A/E/C Organizations, 690
Methods of Motivating for Increased Productivity, 672
Motivating Technical Employees, 1229
Short-Term Goal Setting for Construction, 119

Multiple objective analysis
Modeling School Utilization and Consolidation, 1089
Multiobjective Land-Use Planning Model, 1088
Multiobjective Optimization of Prestressed Concrete Structures, 851
RMS: Research Management System, 681

Multiple purpose structures
Conditional-Yield Operating Rules for Low-Flow Management, 1120
Ups and Downs in Chicago, 1302

Multiple use
Robot for Interior-Finishing Works, 9

Multistory buildings
After the Blast, 1230
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967
Stress Distribution in Front Columns of High-Rise Buildings, 889
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813

Municipal government
Shelter from the Storm, 1245

Municipal wastes
Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371
Framework for Assessment of Recycle Potential Applied to Plastics, 348
High-Tech Landfill Caps, 1235
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312

Nails
Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712

Natural frequency
Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210
Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475

Natural gas
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146

Natural resources
Canada's Environmental Review of the North American Free Trade Agreement, 785

Navier-Stokes equations
Flow through Porous Bed of Turbulent Stream, 169
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500

Navigation
Application of GPS Positioning to Management of Mobile Operation, 1019
Attitude Determination with Ashtech 3-D Direction Finding System, 1015
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025
Turbulence in Rivers due to Navigation Traffic, 525

Negative skin friction
Pile Groups under Negative Skin Friction, 469

Negligence
Strict Liability in Civil Engineering Practice, 770

Negotiations
More Than an Underground Success, 1299
Trick Plays and Traps, 1249
Win-Win Negotiating: A Professional's Playbook, 1394

Network analysis
Predicting Pipe Failure Effects in Water Distribution Networks, 1102
Steady State Fluid Network Analysis, 518

Networks
Application of GIS Network Routines for Water Flow and Transport, 1114
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136
Microcomputer Implementation of Pavement Network Optimization System, 78
Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126
Nondeterministic Networking Methods, 83
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026
Second-Order Design: Shooting for Maximum Reliability, 1021

Neural networks
DBID: Analogy-Based DSS for Bidding in Construction, 109
Infrastructure: Planning and Management, 1365
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055

New York City
All Dressed Up, 1272
New Way Out, 1191

New Zealand
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Niagara River
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Nigeria
Construction Cost Factors in Nigeria, 124

Nitrates
Agronomic and Environmental Benefits of Water-Table Management, 658
Nitrate Leaching under Irrigated Corn, 620
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360

Nitrification
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357

Nitrogen
Biological Treatment of Wastewater from Nitrosophenol Production, 353
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361

Nitrogen oxide
Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Noise
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077

Noise measurement
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077

Noise tolerances
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077

Nomographs
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011

Nondestructive tests
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Development of Interferometer for Acoustic Emission Testing, 285
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Field Evaluation of Preformed Membranes, 1047
In Search of Better Load Ratings, 1275
Innovation in Repair Techniques of Concrete Structures, 1366
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057
Scoping Out Scour, 1220

Nonlinear analysis
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Direct Analysis of Slender Columns with P-Delta Effects, 855
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844

Inelastic Behavior of Hyperbolic Cooling Tower, 933
Moving Load Response of Layered Soil. I: Formulation, 270
Non-Gaussian Properties of Second-Order Random Waves, 168
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Nonlinear Analysis of Space Frames with Finite Rotations, 806
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078
Nonlinear Finite Element Analysis of RC Slab Bridge, 811
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
Pile Groups under Negative Skin Friction, 469
Shear Behavior of RC Structural Walls, 847
Site-Dependent Strength-Reduction Factors, 1004
Stability Functions for Members with Semirigid Joint Connections, 833
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481

Nonlinear programming

Multiobjective Optimization of Prestressed Concrete Structures, 851
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Nonlinear response

Cyclic Response of Axially Loaded Pile Groups, 457
Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194
Pile Group Settlement Analysis by Hybrid Layer Approach, 437

Nonlinear systems

Responses of Dynamic Systems Excited by Non-Gaussian Pulse Processes, 257
Toppling of Computer-Type Equipment under Base Excitation, 156

Nonpoint pollution

Buffer Zones Around Water-Supply Reservoirs, 1132
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607
Getting to the Nonpoint Source with GIS, 1240
Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351
Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360

North Sea

Coastlines of the Southern North Sea, 1342

Notch effect

Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40

Notch sensitivity

Notch Sensitivity of First-Year Sea Ice, 226

Nuclear power plants

Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Introduction to Structural Failure Modes for Nuclear Power Facilities, 140
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Nuclear wastes disposal

Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352

Numerical analysis

Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495
Calculation of Compound-Open-Channel Flow, 578
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593
Diffraction of Solitary Waves by Breakwaters, 1150
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918
Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Moment-Curvature Relationships for Dented Tubular Sections, 852
Numerical Analysis of Drained Direct and Simple Shear Tests, 485
Numerical Evaluation of Terzaghi's N_γ, 410
Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560
Parallel Connecting Beams for Equivalent Structures, 986
Rational Polynomial Technique in Slope-Reliability Analysis, 487
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384
Thermal Actions for Concrete Bridge Design, 938
Transverse Vibration of Thick Annular Sector Plates, 242
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Numerical models

Cal Poly Model Canal, 631
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Computation of Wind Pressures on L-Shaped Buildings, 239
Description and Evaluation of Program CANAL, 635
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
Fatigue Reliability Under Nonstationary Loads: Model Application, 945

Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Irregular Wave Reflection and Runup on Permeable Slopes, 1178
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254
Modal Identification of Cable-Stayed Pedestrian Bridge, 997
Numerical Modeling of Transient Creep in Polycrystalline Ice, 268
Numerical Simulations of Large Water Waves due to Landslides, 573
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252
Simple Friction Model for Scissor-Type Mobile Structures, 175
Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554
Soil-Water Distribution under Trickle Source, 615
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590
Stability of Active-Tendon Structural Control with Time Delay, 207
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902
Subsurface Drainage System Design and Drain Water Quality, 619
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481
Three-Dimensional Calculation of Scour Around Cylinders, 556
Unique Problems in Modeling Irrigation Canals, 629
Unsteady-Flow Modeling of Irrigation Canals, 626

Nutrients

Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349

Objectives

Different Perceptions of Importance of Educational Objectives, 794
Multiobjective Land-Use Planning Model, 1088

Object-oriented languages

Modeling Operational Activities in Object-Oriented Simulation, 56
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74
Object-Oriented Finite Element Analysis Using EER Model, 962
Spatial Data Models for Managing Subsurface Data, 65

Ocean disposal

Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148

Ocean engineering

Civil Engineering in the Oceans V, 1332

Ocean environments

Coastal Zone '93, 1336

Ocean waves

Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151

Offshore engineering

Civil Engineering in the Oceans V, 1332

Offshore platforms

Civil Engineering in the Oceans V, 1332
Influence of Cross Section on Wave Scour Around Piles, 1174
Model Study of a Cable-Moored Conical Platform, 44

Offshore structures

Civil Engineering in the Oceans V, 1332
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179
Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842
Interaction of Waves with *N* Vertical Circular Cylinders, 1188
Marine Component Fatigue Reliability, 932
Non-Gaussian Properties of Second-Order Random Waves, 168
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172

Oil spills

Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349

Open channel flow

Calculation of Compound-Open-Channel Flow, 578
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593
Flow through Porous Bed of Turbulent Stream, 169
Incipient Hydraulic Jump at Channel Junctions, 516
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539
Nonunique Water-Surface Profiles in Open Channels, 579
Self-Aerated Flows on Chutes and Spillways, 506
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510
Unsteady-Flow Modeling of Irrigation Canals, 626
Verification of Theory of Roll-Wave Formation, 537

Open channels

Control Method for On-Demand Operation of Open Channel Flow, 596
Critical Depth, Velocity Profiles, and Averaging, 610
Description and Evaluation of Program: DUFLOW, 636
Description and Evaluation of Program USM, 633
Hydrodynamic Behavior of Compound Rectangular Open Channels, 515
Numerical Methods Used to Model Unsteady Canal Flow, 628

Numerical Modeling of Flood Propagation through System of Reservoirs, 514
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499
Study on Porous Wave Makers, 243
Three-Dimensional Flow Structure at Open-Channel Diversions, 568

Openings
Changes in Entrance Resistance of Subsurface Drains, 624
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968

Operation
Interaction Between Subcycles: One Key to Improved Methods, 125
Interactive Computer Graphics for Expert-System Verification, 1134

Optimal control methods
Application of Hybrid Sliding Isolation System to Buildings, 272
Comprehensive Open-Channel Expansion Transition Design, 580
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Friction-Controllable Sliding Isolation System, 259
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267
Real-Time Optimal Stochastic Control of Power Plant River Heating, 135
Simple Model for Optimal Control of Tall Buildings, 857

Optimal design
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136
Computer-Automated Design of Semirigid Steel Frameworks, 906
Expert System for Optimum Design of Concrete Structures, 59
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503
Microcomputer Model for Design and Location of Runway Exits, 1053
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254
Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41
Optimum Design of Three-Dimensional Framework Structures, 846
Optimum Design of Unstiffened Built-Up Girders, 963
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605
Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Optimal use
Modeling School Utilization and Consolidation, 1089

Optimization
Computer-Automated Design of Reinforced Concrete Frameworks, 922
Diagnostic Checking in Stochastic Dynamic Programming, 1131
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369
Estimation and Optimization of Transient Seepage with Free Surface, 655
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Integrated Genetic Algorithm for Optimization of Space Structures, 36
Microcomputer Bridge Management System, 1031
Microcomputer Implementation of Pavement Network Optimization System, 78
Multiobjective Optimization of Prestressed Concrete Structures, 851
Optimal Control of Freeway Corridor, 1061
Optimal Direct Output Feedback of Structural Control, 276
Optimal Discretization of Random Fields, 215
Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Optimal Management Strategies for Cutback Furrow Irrigation, 662
Optimal Operation of Multiple-Reservoir System, 1101
Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144
Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007
Probability-Based Bridge Inspection Strategy, 1005
Project-Level Model Process for Implementing Constructability, 132
Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106
Reliability of Optimized Furrow-Infiltration Parameters, 641
Reliability-Based Optimization of Series Systems of Parallel Systems, 865
Reservoir-System Simulation and Optimization Models, 1129
Risk-Based Bridge Management, 1076
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949
Scheduling of Repetitive Projects with Cost Optimization, 123
Second-Order Design: Shooting for Maximum Reliability, 1021
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173
Stochastic Optimization Models for Structural-Reliability Analysis, 818
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Optimization models
Damage Detection in Composite Materials Using Identification Techniques, 39

Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091
Optimal Dimensions of Bus Service Zones, 1065

orbits
Structural and Orbital Conditions on Response of Large Space Structures, 23

Organic carbon
Minimization of Multistage RBC Active Disc Area, 314
Prediction of Rotating Biological Contactor Efficiency Using TOC, 328

Organic chemicals
Biological Treatment of Wastewater from Nitrosophenol Production, 353

Organic compounds
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Organization theory
Adult-Development Perspective for Managing Professionals, 680
Practical Models for Organizational Assessment, 666
Resistance to Change: Why Your TQM Efforts May Fail, 692

Organizational policy
Effective Total Quality Management (TQM) Process, 693
Managing Implementation of Change, 687
New Paradigm for Coordination in Water Industry, 1138

Organizations
Managing for Creativity and Innovation in A/E/C Organizations, 690
Practical Models for Organizational Assessment, 666
Project Information Management System—Another Approach, 665
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130

Oscillations
Study on Porous Wave Makers, 243
Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291
Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Outfall sewers
Asymptotic Solutions and Behavior of Outfall Flumes, 524
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552
Round Buoyant Jet Entering Shallow Water in Motion, 575

Outflows
Step-Function Response of Muskingum Reach, 609

Overconsolidation
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441
Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478

Overflow
Characteristics of Circular-Crested Weir, 557
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595

Overland flow
Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495
Application of SHE for Irrigation-Command-Area Studies in India, 582
Criterion Delineating the Mode of Headcut Migration, 494
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555

Overpasses
Driving Under a Construction Site, 1224

Overtopping
RCC: Rehab Results, 1261
Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

Owners
Knowledge-Based Design of Project-Procurement Process, 57
Lead is a Four-Letter Word, 1257

Oxidation
Glyphosate Removal from Drinking Water, 368
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343

Oxygen
Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Oxygen transfer
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511
Measurement of Oxygen Transfer in Clean Water, 1371
Oxygen Transfer in Bubbly Turbulent Shear Flow, 493
Oxygen Transfer in Trickling Filters, 364

Oxygenation
Measurement of Oxygen Transfer in Clean Water, 1371
Oxygen Transfer in Bubbly Turbulent Shear Flow, 493

Panels
Builders as Sources of Construction Innovation, 113
Plastic Tripping of Ring Stiffeners, 898
Propagating Instabilities in Long Shallow Panels, 181

Parameters
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808

Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659
Development of Regression Models with Below-Detection Data, 310
Kalman Filter—Finite Element Method in Identification, 159
Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Parking facilities
After the Blast, 1230

Particle distribution
Vertical Distribution of Particles in Stratified Lake, 326

Particle motion
Effect of Bed Surface Structure on Spherical Particle Stability, 1160

Particle removal
Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309
Particle Size and Chemical Effects on Contact Filtration Performance, 331

Particle size
One-Dimensional High-Pressure Compression of Granular Media, 374
Particle Size and Chemical Effects on Contact Filtration Performance, 331
Role of Suspension Polydispersivity in Granular Media Filtration, 308
Surface Sampling in Gravel Streams, 521

Particle size distribution
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607
Predicting Release of PCBs at Point of Dredging, 302

Particles
Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309
One-Dimensional High-Pressure Compression of Granular Media, 374

Particulate media
Frost Action in a Hydrophobic Material, 49
Stochastic Model of Particulate Transport in Porous Medium, 543
Vertical Distribution of Particles in Stratified Lake, 326

Partnering
Partnering-Project Performance in U.S. Army Corps of Engineers, 691

Partnerships
Partnering: Providing Effective Project Control, 670

Passive control
Minimum Variance Control of Base-Isolated Floors, 829
Simple Model for Optimal Control of Tall Buildings, 857

Pathogens
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329

Pavement condition
Automating Inspection of Highway Pavement Surfaces, 1027
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Microcomputer Implementation of Pavement Network Optimization System, 78
Primitive-Based Classification of Pavement Cracking Images, 1054
So Much Pavement, So Little Time, 1289
Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Pavement damage
Analysis of Segmentation Algorithms for Pavement Distress Images, 1083
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733

Pavement design
Airport Pavement Innovations—Theory to Practice, 1325
The Proof is in the Pavement, 1267

Pavement deterioration
Mathematics of Concrete Scaling, 716
Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035
So Much Pavement, So Little Time, 1289
Stabilization of Jointing Sand in Block Paving, 1036

Pavement joints
Stabilization of Jointing Sand in Block Paving, 1036

Pavement management systems
Analysis of Segmentation Algorithms for Pavement Distress Images, 1083
Automating Inspection of Highway Pavement Surfaces, 1027
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Microcomputer Implementation of Pavement Network Optimization System, 78
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055
So Much Pavement, So Little Time, 1289

Pavements
Airport Pavement Innovations—Theory to Practice, 1325
Analysis of Concave Curling in Concrete Slabs, 1068
Automating Inspection of Highway Pavement Surfaces, 1027
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057
Primitive-Based Classification of Pavement Cracking Images, 1054
The Proof is in the Pavement, 1267
Recycled Roads, 1222
Response of Continuous Pavements to Moving Dynamic Loads, 253

Stabilization of Jointing Sand in Block Paving, 1036
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058
Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Peat
Dynamic Tests of Pipe Pile in Saturated Peat, 467

Pedestrian safety
Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Pedestrians
Modal Identification of Cable-Stayed Pedestrian Bridge, 997
Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Peer review
Collaboration in the Engineering Classroom, 791

Pennsylvania
Pittsburgh Goes International, 1190

Penstocks
Steel Penstocks, 1384

People movers
Automated People Movers IV, 1328
Traversing the Terminals, 1269

Percolation
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625
Modeling Subsurface Drainage and Surface Runoff with WEPP, 642

Performance
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369
Haul-Unit Performance, 121
Local Water, Local Control, 1253
Methods of Motivating for Increased Productivity, 672
Optimal Management Strategies for Cutback Furrow Irrigation, 662

Performance evaluation
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146
Construction and Performance of Shoulders Using Unrap Base, 719
Criteria for Evaluation of Watershed Models, 611
Defensible Performance Appraisals, 669
Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367
Modeling Human Performance in Reinforced Concrete Beam Construction, 81
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081
RMS: Research Management System, 681
Waste Products as Highway Materials in Flexible Pavement System, 1056

Performance rating
Defensible Performance Appraisals, 669

Permeability
Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470
Compacted Clay Liners and Covers for Arid Sites, 387
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377
Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Irregular Wave Reflection and Runup on Permeable Slopes, 1178
Permeability Behavior of a Water Treatment Sludge, 474
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711
Tropical Clays. I: Index Properties and Microstructural Aspects, 426
Tropical Clays. II: Engineering Behavior, 427

Permeability tests
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345

Permits
Shelter from the Storm, 1245

Personnel development
Designing Executive-Development Programs for Engineering Managers, 678
Implementing TQM in Consulting Engineering Firm, 685

Personnel management
Adult-Development Perspective for Managing Professionals, 680
Defensible Performance Appraisals, 669
Designing Executive-Development Programs for Engineering Managers, 678
Empowering High-Performing People to Promote Project Quality, 683
Finding Your Way through Conflict, 671
Methods of Motivating for Increased Productivity, 672

Perturbation
Postbuckling Analysis of Stiffened Laminated Box Columns, 150
Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291
Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292
Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

Pesticides
Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351

Petroleum
A Natural Cleanup, 1213

Petroleum products
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146
Water-Table Correction Factors to Applied Gasoline Contamination, 334

pH
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301
Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355

Phenol
Biological Treatment of Wastewater from Nitrosophenol Production, 353
Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363

Phosphorus
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361

Phosphorus compounds
Investigation of Phosphate Mining Waste for Construction Materials, 714

Photochemical reactions
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343

Photogrammetry
Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289
Phototriangulation Using CCD Camera in Close-Range Environment, 1017

Physical properties
Manufacture of Cement from Sewage Sludge, 697
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Piers
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902

Piezometers
Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470

Piezometric head
Steady State Fluid Network Analysis, 518

Pile bearing capacities
Simplified Dynamic Method for Pile-Driving Control, 416

Pile driving
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55
Probabilistic Assessment of Pile Interference, 405
Simplified Dynamic Method for Pile-Driving Control, 416
Wave Equation Parameters from Driven-Rod Test, 440

Pile foundation design
Design of Pile Foundations, 1350
Fast Foundation for Soft Clay, 1215

Pile foundation performance
Design of Pile Foundations, 1350

Pile foundations
Design of Pile Foundations, 1350
Pin Piles Save Silos, 1276

Pile groups
Cyclic Response of Axially Loaded Pile Groups, 457
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Pile Group Settlement Analysis by Hybrid Layer Approach, 437
Pile Groups under Negative Skin Friction, 469
Probabilistic Assessment of Pile Interference, 405
Settlement of Pile Groups—Practical Approach, 460

Pile load tests
Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418

Pile settlement
Settlement of Pile Groups—Practical Approach, 460

Pile tests
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Fast Foundation for Soft Clay, 1215
Interaction of Axial and Lateral Pile Responses, 424
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375

Piles
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349
Impedance Functions of Piles in Inhomogeneous Media, 458
Influence of Cross Section on Wave Scour Around Piles, 1174
Interaction of Axial and Lateral Pile Responses, 424
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375
Plastic Piling, 1227
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379
Rational Mechanics of Axial Soil-Pile Interaction, 196
Tensile and Compressive Shaft Capacity of Piles in Sand, 489
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Pipe flow
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535
Evaluation of von Karman's Constant from Integral Flow Parameters, 565
Predicting Pipe Failure Effects in Water Distribution Networks, 1102
Steady State Fluid Network Analysis, 518

Pipe jacking
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133

Pipe lining
Slip-Lining Solution, 1288

Pipe networks
Discrete Volume-Element Method for Network Water-Quality Models, 1133
Modeling Pipe Networks Dominated by Junctions, 550
Steady State Fluid Network Analysis, 518

Pipeline design
Design of a Submarine Oil Pipeline, 1038
Drilling with Direction, 1271
Pipeline Infrastructure II, 1376
Pressure Pipeline Design for Water and Wastewater, 1378
Sludge Under Pressure, 1198

Pipeline pigs
Invasion of the Zebra Mussels, 1233

Pipelines
Frost Heave Induced Mechanics of Buried Pipelines, 488
Hydraulics of Irrigation Laterals: Comparative Analysis, 586
Pipeline Infrastructure II, 1376
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459
Prediction of Bedding Intrusion into Low-Strength Subgrades, 396
Steady State Fluid Network Analysis, 518
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158
Water-Distribution GIS from Fragmented and Incomplete Information, 71

Pitch
Stability of Pitched-Roof Frames in National Building Codes, 980

Plane strain
Hybrid Plane Quadrilateral Element with Corner Rotations, 950
Prediction of Plastic Localization Using MRS-Lade Model, 413

Planning
Automated People Movers IV, 1328
Computer-Aided Planning for Heavy Lifts, 111
Cost-Effective Solid-Waste Characterization Methodology, 339
DART'S ASAP EIS, 1264
Distributed Air-Traffic Control. I: Theoretical Studies, 1072
Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073
Expert Geographic Information System for Texas Water Planning, 1111
How to Make Project Schedules Really Work for You, 674
Model-Based Planning: Scaled-Up Construction Application, 62
Moving an Engineering Firm: A Checklist, 673
Multitask Motion Planning for Material Handling in Construction, 92
New Generation of Planning Structures, 93
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Prebid and Preconstruction Planning Process, 107
Scheduling of Repetitive Projects with Cost Optimization, 123

Plastic analysis
Stochastic Optimization Models for Structural-Reliability Analysis, 818

Plastic deformation
Waste Products as Highway Materials in Flexible Pavement System, 1056

Plastic design
Minimum-Weight Design of Continuous Composite Girders, 879

Plastic hinges
Eccentrically Connected Cleat Plates in Compression, 849
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988

Plasticity
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223
Plasticity Model for Transversely Isotropic Materials, 192
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235
Prediction of Plastic Localization Using MRS-Lade Model, 413
Properties of Incremental Solutions for Dissipative Material, 186
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379
Scaling Laws in Mechanics of Failure, 258
Shear Strength of Reinforced Concrete Deep Beams, 937
Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Plastics
Plastic Piling, 1227
Plastics Composites for 21st Century Construction, 1377

Recycling Plastics in Polymer Concrete for Construction Applications, 713

Plates

Analysis of Building Frames, 831

Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850

Buckling of Elliptical Plates Under Uniform Pressure, 999

Comparative Study of Frequencies for Plates Carrying Mass, 202

Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887

Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888

Delamination Effect on Flutter of Homogeneous Laminated Plates, 34

Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173

Eccentrically Connected Cleat Plates in Compression, 849

Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201

Finite Element Method for Buckling Analysis of Plate Structures, 864

Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221

Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148

Plate-Load Tests of Collapsible Soils, 411

Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264

Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265

Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149

Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171

Structural Behavior of Architectural Laminated Glass, 817

Transverse Vibration of Thick Annular Sector Plates, 242

Plumes

Asymptotic Solutions and Behavior of Outfall Flumes, 524

Energetic Bubble Plumes in Arbitrary Stratification, 532

Lake Destratification by Bubble-Plume Systems: Design Methodology, 512

Plunging flow

Energetic Bubble Plumes in Arbitrary Stratification, 532

Political factors

Coastlines of the Black Sea, 1339

Pollutants

Shelter from the Storm, 1245

Pollution

Canada's Environmental Review of the North American Free Trade Agreement, 785

Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321

Pollution abatement

Responsible Management of Tourist Island, 782

Pollution control

Getting to the Nonpoint Source with GIS, 1240

Hydrocarbon Exclusion from Ground Water During Freezing, 344

Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351

Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342

Polycrystalline

Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223

Polyethylene

Framework for Assessment of Recycle Potential Applied to Plastics, 348

Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484

Polygons

Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72

Polymer concretes

Characterization of Polyester Polymer and Polymer Concrete, 701

Recycling Plastics in Polymer Concrete for Construction Applications, 713

Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728

Polymers

Characterization of Polyester Polymer and Polymer Concrete, 701

Cracking in Exterior Insulation and Finish Systems, 737

Mechanisms for Overdosing in Sludge Conditioning, 307

Polynomials

Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153

Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274

Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167

Smooth Boundary Approximation for Directly Computing Irregular Area, 1020

Polyvinyl chloride

Ranking PVC Roofing Membranes Using Thermal Analysis, 702

Ponding

Reliability-Based Design of Wood Members Subject to Ponding, 994

Pontoons

What Sank the Lacey Murrow?, 1293

Population statistics

Growth Management in the City of San Diego: Planning the Future Now, 1095

Population Estimation of City from Aerial Photographs: Riyadh Case, 1100

Pore pressure
Cyclic Characterization of Liquefiable Sands, 482
Dynamic Compaction of Saturated Porous Columns, 241
Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480
Stress Analysis of Borehole in Poroelastic Medium, 220

Pore size distribution
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439
Tropical Clays. I: Index Properties and Microstructural Aspects, 426

Pore water
Electrical Response of Two-Phase Soil: Theory and Applications, 451

Pore water pressure
Finite Element Analyses of HDR-4 Excavation, 13
Instability of Granular Soils Under Strain Path Testing, 429
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Porosity
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Dynamic Response of Poroelastic Bed to Water Waves, 553
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Electrical Response of Two-Phase Soil: Theory and Applications, 451
Influence of Surface Finish on Sorptivity on Concrete, 705
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439

Porous materials
Flow through Porous Bed of Turbulent Stream, 169
Measurement of Effective Diffusivities in Solidified Wastes, 299
Study on Porous Wave Makers, 243
Water Waves on Flexible and Porous Breakwaters, 208

Porous media
Dynamic Compaction of Saturated Porous Columns, 241
Dynamic Pressure of Water and Sediment on Rigid Dam, 232
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581
Moving Load Response of Layered Soil. I: Formulation, 270
Moving Load Response of Layered Soil. II: Verification and Application, 271
Stochastic Model of Particulate Transport in Porous Medium, 543
Water Waves on Crown Breakwaters, 1168

Porous media flow
Dynamic Response of Poroelastic Bed to Water Waves, 553
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498

Portland cements
Cracking in Exterior Insulation and Finish Systems, 737
Investigation of Phosphate Mining Waste for Construction Materials, 714
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728

Ports
Probing the Port of Los Angeles, 1196

Post tensioning
Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911

Postbuckling behavior
Nonlinear Analysis of Space Frames with Finite Rotations, 806
Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265
Postbuckling Analysis of Stiffened Laminated Box Columns, 150
Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184

Potable water
Glyphosate Removal from Drinking Water, 368
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319
MSA for VOC Removal, 1216

Potential flow
Analysis of Wave Scattering by Submerged Circular Disk, 256
Multiple-Zone Potential Solution around Wing-Body Configurations, 37

Potential theory
Properties of Incremental Solutions for Dissipative Material, 186

Power output
Determination of Most Representative Residential Subdivision, 138

Powerplants
Fossil Power Plant Constructability: Applications of CII Concepts, 139
Real-Time Optimal Stochastic Control of Power Plant River Heating, 135

Precipitation
Engineering Hydrology, 1354
Radar-Assisted Real-Time Flood Forecasting, 1103

Preconsolidation pressure
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441

Predictions
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155

Third-Generation Wind-Wave Model for Use on Personal Computers, 1147
Three-Dimensional Model for Wood-Pole–Strength Predictions, 931

Prefabrication
Prototype Robotic Masonry System, 17

Pressure distribution
Analysis and Design of Trickle-Irrigation Laterals, 639
Hydraulics of Center-Pivot Laterals, 621
Hydraulics of Irrigation Laterals: Comparative Analysis, 586

Pressure pipes
Pressure Pipeline Design for Water and Wastewater, 1378

Pressure reduction
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503

Pressure vessels
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40
Steel Penstocks, 1384

Pressures
Buckling of Elliptical Plates Under Uniform Pressure, 999
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Sludge Under Pressure, 1198
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590
System Flexibility and Reflected Pressures, 35

Prestressing
The Bicycle Wheel as Prestressed Structure, 174
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008

Pricing
Pricing Construction Risk: Fuzzy Set Application, 127

Priorities
DART'S ASAP EIS, 1264
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055

Private sector
Designing Private Funding Programs for Public Highways, 1098
Lost & Found: Comeback at the IDB, 1316
Private Financing for Infrastructure, 1312

Privatization
Dutch Globetrotting Pays Off, 1321
Infrastructure, IFC-Style, 1311
Infrastructure: Planning and Management, 1365
Privatization Takes Its Toll, 1197

Probabilistic methods
The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294
Hydraulic Engineering '93, 1364
Nondeterministic Networking Methods, 83
Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205
Probabilistic Cost Estimating with Subjective Correlations, 84
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045
Stochastic Drying and Creep Effects in Concrete Structures, 822

Probability
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535
Assessing Cost of Dam Failure, 1105
The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294
Introduction to Structural Failure Modes for Nuclear Power Facilities, 140
Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205
Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
Probability-Based Bridge Inspection Strategy, 1005
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040
Rational Polynomial Technique in Slope-Reliability Analysis, 487
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Site Exploration Strategy for Geologic Anomaly Characterization, 385
Toppling of Computer-Type Equipment under Base Excitation, 156

Probability density functions
Joint Distribution of Large Wave Heights and Associated Periods, 1162

Probability distribution
Probabilistic Screening of Ground-Water Contaminants, 315

Probability distribution functions
Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130

Probability theory
Average-Bid Method—Competitive Bidding Strategy, 89
Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991
Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896
Probabilistic Assessment of Pile Interference, 405
Reliability and Uncertainty Analyses in Hydraulic Design, 1379
Reliability-Based Optimization of Series Systems of Parallel Systems, 865

Problem solving
Essential Tools of Total Quality Management, 684
Expert System Based Training for Emergency Management, 51

Process control
Process-Based Research to Meet the International Challenge, 106
Quality Improvement Experiences in E/A Firm, 682

Process variables
Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139

Processing
High-Performance Computing in Structural Mechanics and Engineering, 32
Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373

Productivity
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Integration of Engineering, Design, and Construction, 14
Interaction Between Subcycles: One Key to Improved Methods, 125
Masonry Productivity Forecasting Model, 91
Methods of Motivating for Increased Productivity, 672
Overview of Soil Erosion From Irrigation, 649
Short-Term Goal Setting for Construction, 119

Professional activities
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764
How We Falter and the Lessons We Learn, 804

Professional advancement
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774

Professional development
Developing Coastal Engineers, 769
Exploiting the Leadership Asset of the Engineer, 677
Mandatory Continuing Professional Development for Relicensing of Engineers, 796
Meeting Professional Development Needs in Large Consulting Firm, 795
Second Roebling Lecture 1991, 80
What's In It for Me?, 1310

Professional practice
Computer-Use Factors in Transportation Engineering Project Management, 76
Contemporary Model of Civil Engineering Failures, 771
Digger's Decline: A Fable for Civil Engineers, 792
Ethical Issues Experienced by Engineering Students and Practitioners, 801
Ethics in Practice, 762
Exploiting the Leadership Asset of the Engineer, 677
Failure as Source of Engineering Judgment: Case of John Roebling, 736
Human Factors in Civil and Geotechnical Engineering Failures, 388
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199
Listening to Research Clients, 803
Practice of Professionalism, 761
Prebid and Preconstruction Planning Process, 107
Professional Ethics Training for Engineering Firms, 775
Professional Issues in Coastal Engineering, 787
Restructuring the Engineering and Engineering Technology Relationship, 773
Strict Liability in Civil Engineering Practice, 770
Structural Failures and Engineering Ethics, 893
Whistle-Blowing—A Professional Responsibility, 759

Professional registration
Bachelor of Civil Technology and Civil Engineering Programs, 768
Ethics in Practice, 762
Strategy for Passing the Civil P.E. Exam, 788

Professional role
Exploiting the Leadership Asset of the Engineer, 677
Facilitating Sustainable Development: Role of Engineer, 780
How We Falter and the Lessons We Learn, 804
Monitoring Well-Being of Civil Engineering Profession, 758
Practice of Professionalism, 761
Sharing the Pride, 767
Skills Required of Effective Project Managers, 676
Whistle-Blowing—A Professional Responsibility, 759
Why Do Engineers Wear Black Hats?, 756

Professional societies
ASCE Activities Become Global Issues, 786
Sharing the Pride, 767

Profiles
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Seismic Response of R/C Frames with Irregular Profiles, 1
Stream Function Wave Theory with Profile Constraints, 1153

Profits
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199

Program evaluation
Comparison of Two Corporate Constructability Programs, 129

Progressive failure
Progressive Failure of Lower San Fernando Dam, 393

Project control
Cost, Schedule, and Time Variances and Integration, 96
Effective Management in Computerized SCADA System, 668
How to Make Project Schedules Really Work for You, 674
Partnering: Providing Effective Project Control, 670
Systematic Automated Management Exception Reporting, 86

Project evaluation
Checklist of Critical Success Factors for Building Projects, 679

Partnering-Project Performance in U.S. Army Corps of Engineers, 691

Project management

Computer-Use Factors in Transportation Engineering Project Management, 76
The Denver Airport: Managing a Megaproject, 1236
Empowering High-Performing People to Promote Project Quality, 683
Getting Along: The Geotech and the CM, 1256
How to Make Project Schedules Really Work for You, 674
The Mightiest of Them All: Memories of Grand Coulee Dam, 1373
Partnering: Providing Effective Project Control, 670
Privatization Takes Its Toll, 1197
Project Information Management System—Another Approach, 665
Quality Assurance for Thermal Power Project Construction in India, 739
Skills Required of Effective Project Managers, 676
Systematic Automated Management Exception Reporting, 86
Taking the Pain out of the Punch List, 1268
Tying Up The Artery, 1295

Project managers

How to Make Project Schedules Really Work for You, 674
Skills Required of Effective Project Managers, 676

Project planning

Back to Iran, 1322
Checklist of Critical Success Factors for Building Projects, 679
Cold Region Logistics Planning and Management, 43
Compendium of Pumped Storage Plants in the United States, 1344
Computer-Integrated Design Drawings and Construction Project Plans, 126
Design Projects in Civil Engineering Curriculum, 793
Knowledge-Based Approach to Modular Construction Decision Support, 88
Prebid and Preconstruction Planning Process, 107
Project-Level Model Process for Implementing Constructability, 132
Simulation Technologies for Planning Heavy Construction Processes, 101
South Africa at the Crossroads, 1323
Total Quality Management at Construction Jobsites, 688
Vietnam: Worth Looking Into, 1319

Project selection

Governmental Priorities in Irrigation Project Selection in Indonesia, 1125

Project specifications

Need for Specification Format that Accommodates Engineered Projects, 128

Projects

OCEA Goes Green, 1252
Second Roebling Lecture 1991, 80

Propellers

Reservoir Destratification via Mechanical Mixers, 519

Protective structures

Protection Against Scour at SAF Stilling Basins, 501
Water Waves on Crown Breakwaters, 1168

Pseudodynamic method

Posterior Time-Step Adjustment in Pseudodynamic Testing, 230

Public benefits

Small-Government GIS, 1243

Public opinion

Facilitating Sustainable Development: Is Our Approach Correct?, 779
Monitoring Well-Being of Civil Engineering Profession, 758
Practice of Professionalism, 761
Professional Issues in Coastal Engineering, 787
Why Do Engineers Wear Black Hats?, 756

Public participation

Beach Nourishment Engineering and Management Considerations, 1329
Coastal Engineering Considerations in Coastal Zone Management, 1333
Coastal Management in Mexico: the Baja California Experience, 1335
Coastal Zone '93, 1336
Coastlines of Canada, 1337
Coastlines of Japan II, 1338
Coastlines of the Gulf of Mexico, 1340
Coastlines of the Mediterranean, 1341
Coastlines of the Southern North Sea, 1342
Coastlines of Western Africa, 1343
Deltas of the World, 1347
Facilitating Sustainable Development: Role of Engineer, 780
The Management of Coastal Lagoons and Enclosed Bays, 1368
Why Do Engineers Wear Black Hats?, 756

Public policy

Infrastructure and Economic Development: Civil Engineering Perspective, 763

Public safety

Public Safety—Is it Compromised by New LRFD Design Standards?, 876

Public service

Civil Engineering for the Community, 1331

Public transportation

Optimal Dimensions of Bus Service Zones, 1065

Public works

Deliverance, 1200
Infrastructure and Economic Development: Civil Engineering Perspective, 763
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124
Partnering-Project Performance in U.S. Army Corps of Engineers, 691
Small-Government GIS, 1243

Publications

ASCE Annual Combined Index—1992, 1327

Pull-out resistance

Bond and Slip of FRP Rebars in Concrete, 698

Field Tests of Anchors in Clay. I: Description, 465
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Pulse generators
Second-Order Radiation Condition for Surface Wave–Body Interaction, 216

Pultrusion
Local Buckling of FRP Beams and Columns, 720

Pump turbines
Rocky Mountain Hydro, 1231

Pumped storage
Compendium of Pumped Storage Plants in the United States, 1344
Rocky Mountain Hydro, 1231

Pumping
Optimal Operation of Multiple-Reservoir System, 1101
Sludge Under Pressure, 1198

Pumps
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136
Microsystems Irrigation in Niger, West Africa, 647

Qualifications
What's In It for Me?, 1310

Quality assurance
Infratechnologies: Tools For Innovation, 1297
The Proof is in the Pavement, 1267
Quality Assurance for Thermal Power Project Construction in India, 739

Quality control
Empowering High-Performing People to Promote Project Quality, 683
Enhancing Value of Environmental Data: Data Lineage Reporting, 298
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
Quality Assurance for Thermal Power Project Construction in India, 739
Quality Function Deployment—System for Meeting Customers' Needs, 112
Quality Improvement Experiences in E/A Firm, 682

Quality control - management
Applying Total Quality Management to Design and Construction, 686
Effective Total Quality Management (TQM) Process, 693
Essential Tools of Total Quality Management, 684
Implementing TQM in Consulting Engineering Firm, 685
Implementing TQM in Engineering and Construction, 695
Resistance to Change: Why Your TQM Efforts May Fail, 692
Taking the Pain out of the Punch List, 1268
Total Quality Management at Construction Jobsites, 688
Total Quality—Does it Work in Engineering Management?, 694
TQM: A View from The Playing Field, 689

Quantitative analysis
Pricing Construction Risk: Fuzzy Set Application, 127

Queueing
Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029

Radar
Radar-Assisted Real-Time Flood Forecasting, 1103

Radial flow
Movement of Ground Water in Converging Aquifer, 602
Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433

Radiation
Second-Order Radiation Condition for Surface Wave–Body Interaction, 216
Second-Order Wave Loads on Planar Wavemakers, 1177

Radioactive waste disposal
Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352
High Level Radioactive Waste Management, 1361

Radioactive wastes
High Level Radioactive Waste Management, 1361

Raft foundations
Piled Rafts in Swelling or Consolidating Soils, 397

Railroad trains
New Way Out, 1191

Railroads
Land-Grant Policy and Engineering Education, 805
Two-Time Winner, 1300

Rain gages
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502
Radar-Assisted Real-Time Flood Forecasting, 1103

Rainfall
Asymptotic Determination of Runoff Curve Numbers from Data, 604
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502
Numerical Modeling of Flood Propagation through System of Reservoirs, 514

Rainfall duration
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555
Short-Duration-Rainfall Intensity Equations for Drainage Design, 643

Rainfall frequency
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659

Rainfall intensity
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555
Short-Duration-Rainfall Intensity Equations for Drainage Design, 643

Rainfall-runoff relationships
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121

Ramps
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060
Optimal Control of Freeway Corridor, 1061

Random processes
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211
Simulation of Spatially Incoherent Random Ground Motions, 206
Stochastic Drying and Creep Effects in Concrete Structures, 822

Random variables
Optimal Discretization of Random Fields, 215
Selection of Random Field Mesh in Finite Element Reliability Analysis, 187

Random vibration
Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248
Marine Component Fatigue Reliability, 932
Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
Spatial Seismic Excitations and Response Spectra, 293
Toppling of Computer-Type Equipment under Base Excitation, 156
Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Random waves
Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151
Non-Gaussian Properties of Second-Order Random Waves, 168

Rapid transit railways
High Speed Ground Transportation Systems I: Planning and Engineering, 1362

Rapid transit systems
Bored Tunneling for Singapore Metro, 7

Ratings
Rating and Preliminary Analysis of Suspension Bridges, 956

Real-time programming
Description and Evaluation of Program MODIS, 637
Egypt's Real Time Water Management, 1304
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062

Recirculation
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Reclamation
Integrated Hydrologic Modeling with Geographic Information Systems, 1108

Reconstruction
Recycling on the Mississippi, 1207

Records management
Construction Field Data Acquisition with Pen-Based Computers, 103

Recovery planning
Kesterson Crisis, 614

Recruiting
Civil Engineering Evolution, 757
Digger's Decline: A Fable for Civil Engineers, 792
Model of Career Choice for Craftworkers, 87

Recycling
Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371
Framework for Assessment of Recycle Potential Applied to Plastics, 348
Plastic Piling, 1227
Recyclability of Moisture Damaged Flexible Pavements, 731
Recycled Roads, 1222
Recycling Drainage Water in San Joaquin Valley, California, 599
Recycling on the Mississippi, 1207
Recycling Plastics in Polymer Concrete for Construction Applications, 713
Scrap Tires: Management and Economics, 372
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330
Utilization of Industrial By-Products for Construction Materials, 1391

Redundancy
Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106

Reflection
System Flexibility and Reflected Pressures, 35
Water Waves on Crown Breakwaters, 1168

Refuse disposal
Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370

Regeneration
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343

Regional analysis
Movement of Ground Water in Converging Aquifer, 602
Regional Irrigation Water Demand, 644
Regionalized Partial-Duration Balanced-Hydrograph Model, 657
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123

Regional development
Governmental Priorities in Irrigation Project Selection in Indonesia, 1125
Landfill on Screen, 1244

Regional planning
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337

Registration
Professional Issues in Coastal Engineering, 787

Regression analysis
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859
Predicting Water-Main Breakage Rates, 1127

Regression models
Development of Regression Models with Below-Detection Data, 310

Regulations
Analysis of Back Injuries in Construction, 118
The 'Criminalization' of Government Procurement, 1217
Data Validation Practices and Risk Assessment, 1214
Fit to Drink, 1232
High-Tech Landfill Caps, 1235
Housing Linkage Fees: Lessons for Los Angeles, 1096
Infrastructure Construction: Effect of Social and Environmental Regulations, 790
Keeping the Books: A Taxing Task, 1307
Reclaiming Clear-Cut Land, 1298
SITE CODE: Computer-Based Regulatory Information for Site Development, 1087

Rehabilitation
The Big No-Dig, 1305
Geotechnical Practice in Dam Rehabilitation, 1359
Hassle-Free Bridge Rehab, 1270
Infrastructure Construction: Effect of Social and Environmental Regulations, 790
Innovation in Repair Techniques of Concrete Structures, 1366
London Linkage, 1258
MASSPORT Modernization, 1223
Microcomputer Bridge Management System, 1031
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Pipeline Infrastructure II, 1376
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861
RC Frame Connections Rehabilitated by Jacketing, 886
RCC: Rehab Results, 1261
Runway Rehab: A Case for CADD, 1242
Seismic Remediation for Earth Dams, 1308
Slip-Lining Solution, 1288
Small Dam Rehabs, 1192
Supply-Side Solutions, 1225
Trenchless Track Record, 1274
Waterpower '93, 1393

Reinforcement
A Better Grade Of Grade, 1282
Large-Strain Analysis of Reinforced Membranes, 294
Response of Long-Span Soil-Metal Structures, 836
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Reinforcing steels
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707

Relaxation, mechanics
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Reliability
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327
The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294
Marine Component Fatigue Reliability, 932
Moment-Curvature Relationships for Dented Tubular Sections, 852
Predicting Pipe Failure Effects in Water Distribution Networks, 1102
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
Reliability and Uncertainty Analyses in Hydraulic Design, 1379
Reliability-Based Design of Wood Members Subject to Ponding, 994
Reliability-Based Optimization of Series Systems of Parallel Systems, 865
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Risk-Based Bridge Management, 1076
Second-Order Design: Shooting for Maximum Reliability, 1021
Serviceability Design in LRFD for Wood, 1012
Site Exploration Strategy for Geologic Anomaly Characterization, 385

Reliability analysis
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909
Multimodal Simulation Method for System Reliability Analysis, 217
Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205
Rational Polynomial Technique in Slope-Reliability Analysis, 487
Reliability and Uncertainty Analyses in Hydraulic Design, 1379
Reliability of Optimized Furrow-Infiltration Parameters, 641
Reliability of Wood Structural Systems, 954
Selection of Random Field Mesh in Finite Element Reliability Analysis, 187

Remote control
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133

Remote sensing
Grouped Response Units for Distributed Hydrologic Modeling, 1118
Review of GIS Applications in Hydrologic Modeling, 1115
Technology Assessment and Development of Large Deployable Antennas, 18
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Renewable resources
Engineering Sustainable Development, 1279

Renovation
All Dressed Up, 1272

Repairing
After the Blast, 1230
Innovation in Repair Techniques of Concrete Structures, 1366
Pin Piles Save Silos, 1276
RC Frame Connections Rehabilitated by Jacketing, 886
Small Dam Rehabs, 1192

Repeated loading
Shakedown of Frames with Semirigid Connections, 903

Reporting
Computerized Daily Site Reporting, 104

Research
Engineering Education for Competitive International Economy, 799
Keeping Cables Calm, 1283
Listening to Research Clients, 803
Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375
Prebid and Preconstruction Planning Process, 107
Process-Based Research to Meet the International Challenge, 106
Shotcrete for Underground Support VI, 1382

Research and development
Japanese Building Design and Construction Technologies, 798

Research management
RMS: Research Management System, 681

Research needs
Composite Construction in Steel and Concrete II, 1345
Listening to Research Clients, 803

Reservoir operation
Conditional-Yield Operating Rules for Low-Flow Management, 1120
Diagnostic Checking in Stochastic Dynamic Programming, 1131
Optimal Operation of Multiple-Reservoir System, 1101
Reservoir-System Simulation and Optimization Models, 1129
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123

Reservoir storage
Geotechnical Practice in Dam Rehabilitation, 1359

Reservoir systems
Numerical Modeling of Flood Propagation through System of Reservoirs, 514
Optimal Operation of Multiple-Reservoir System, 1101

Reservoirs
Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531
Buffer Zones Around Water-Supply Reservoirs, 1132
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512
Land Use, Climate and Water Supply, 1145
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511
Reservoir Destratification via Mechanical Mixers, 519
Rocky Mountain Hydro, 1231
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123
Waterpower '93, 1393

Residential location
Determination of Most Representative Residential Subdivision, 138
Population Estimation of City from Aerial Photographs: Riyadh Case, 1100

Residual soils
Tropical Clays. II: Engineering Behavior, 427

Residual strength
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477

Residual stress
Study on Residual Stress Relief of Welded Structural Steel Joints, 715

Resilience
Effects of Aggregate Top Size on Bituminous Concrete, 732
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727

Resins
Recycling Plastics in Polymer Concrete for Construction Applications, 713

Resistance
Alluvial Resistance in Transition Regime, 534
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491
Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896

Resistance factors
Changes in Entrance Resistance of Subsurface Drains, 624
Public Safety—Is it Compromised by New LRFD Design Standards?, 876
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910

Resonance
Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291

Resource allocation
Interactive Dynamic Layout Planning, 97

Resource management
Engineering Sustainable Development, 1279
Interaction Between Subcycles: One Key to Improved Methods, 125
Runoff As A Resource, 1286

Resource recovery
Construction and Performance of Shoulders Using Unrap Base, 719
A Solid Waste Solution, 1251

Resources
Resource-Oriented Modeling and Simulation in Construction, 117

Response spectra
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380
Seismic Response of and Design Aids for Arch Bridges, 973
Site-Dependent Strength-Reduction Factors, 1004
Spatial Seismic Excitations and Response Spectra, 293

Response time
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080

Responsibility
Can Engineers Cut Curtain-Wall Failures?, 1291
Computer-Aided Liability, 1239
Contemporary Model of Civil Engineering Failures, 771
Ethics in Practice, 762
Lead is a Four-Letter Word, 1257
Structural Failures and Engineering Ethics, 893
Whistle-Blowing—A Professional Responsibility, 759

Restoration
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063

Retaining walls
Behavior of Cantilever Retaining Walls, 479
Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453

Retrofitting
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899
Seismic Retrofitting: Spending to Save, 1203

Reversing flow
Hydraulic Design of Reversible Flow Trashracks, 1363
Unique Problems in Modeling Irrigation Canals, 629

Reviewing
More Than an Underground Success, 1299

Reynolds stress
Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249

Ridership
High Speed Ground Transportation Systems I: Planning and Engineering, 1362

Right-of-way
Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029

Rigid-body dynamics
Free Rocking of Prismatic Blocks, 231

Rigidity
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225
Rigidities of Horizontally Curved, Flat Structures, 948
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977
Thermal Stresses in Spherical Shells, 22

Rings
Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850
Plastic Tripping of Ring Stiffeners, 898

Riparian waters
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Riprap
Protection Against Scour at SAF Stilling Basins, 501
Riprap Criteria below Pipe Outlet, 504
Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544
Stability of Riprap at Bridge Piers, 558

Risk
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Professional Issues in Coastal Engineering, 787

Risk acceptance
Kesterson Crisis, 614

Risk analysis
Assessing Cost of Dam Failure, 1105
Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043
Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Geotechnical Practice in Dam Rehabilitation, 1359
Hazmat Transport Risks: Societal and Individual Perspectives, 1039
Incorporating Dam Break Concerns in School Site Selection, 1092
Introduction to Structural Failure Modes for Nuclear Power Facilities, 140
Nondeterministic Networking Methods, 83
Pricing Construction Risk: Fuzzy Set Application, 127
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Risk and Capacity Impacts of ATC Separation Rules, 1074
Risk-Based Bridge Management, 1076
Strict Liability in Civil Engineering Practice, 770
Transportation Hazard Analysis in Integrated GIS Environment, 1044
Whose Risk Is It, Anyway?, 1285

Risk management
Transportation Hazard Analysis in Integrated GIS Environment, 1044

Risks
Going International: Profit or Peril?, 1309

River beds
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548
Surface Sampling in Gravel Streams, 521
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

River systems
Factors Affecting Conveyance in Meandering Compound Flows, 576

Rivers
Effect of Bank Stability on Geometry of Gravel Rivers, 574
Field Measurements of Secondary Currents in Straight Rivers, 526
Hydraulic Design of Flume Aqueducts, 509
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539
Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563
Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130
Real-Time Optimal Stochastic Control of Power Plant River Heating, 135
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566
Turbulence in Rivers due to Navigation Traffic, 525
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Road curves
Lateral Clearance Needs on Compound Horizontal Curves, 1034
Unified Design of Horizontal Circular Curves, 1033

Road design
Bridge Planning Using GIS and Expert System Approach, 66
Lateral Clearance Needs on Compound Horizontal Curves, 1034

Road shoulders
Construction and Performance of Shoulders Using Unrap Base, 719
Lateral Clearance Needs on Compound Horizontal Curves, 1034

Roads
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084

Robotics
Cognitive Force Control of Excavators, 26
Dynamic Model of Excavator, 25
Experiencing Computer Integrated Construction, 99
Human Factors in Introducing On-Site Construction Automation, 131
Japanese Building Design and Construction Technologies, 798
Machine-Friendly Facility, 1202
Motion and Path Control for Robotic Excavation, 16
Multitask Motion Planning for Material Handling in Construction, 92
Position-Force Adaptive Control for Construction Robots, 27
Prototype Robotic Masonry System, 17
Robot for Interior-Finishing Works, 9

Rock mechanics
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447
Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Rockfill structures
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562

Rocks
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447

Rods
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Wave Equation Parameters from Driven-Rod Test, 440

Roller compacted concrete
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706
RCC: Rehab Results, 1261

Roof failures
Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752
Reliability-Based Design of Wood Members Subject to Ponding, 994

Roofs
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894
Ranking PVC Roofing Membranes Using Thermal Analysis, 702
Stability of Pitched-Roof Frames in National Building Codes, 980

Roofs, cable
Cable-Stayed Convention Center, 1201

Rotating biological contactor
Minimization of Multistage RBC Active Disc Area, 314
Prediction of Rotating Biological Contactor Efficiency Using TOC, 328

Rotation
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180
Free Rocking of Prismatic Blocks, 231
Hybrid Plane Quadrilateral Element with Corner Rotations, 950
Nonlinear Analysis of Space Frames with Finite Rotations, 806
Rotating Circular Flume, 536

Rotational flow
Mass Transport in Wave Tank, 1152

Roughness
Generalized Inner Region Velocity Distribution Equation, 530

Routing
Application of GIS Network Routines for Water Flow and Transport, 1114
Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041
Hazmat Transport Risks: Societal and Individual Perspectives, 1039
Optimal Dimensions of Bus Service Zones, 1065
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062
Transportation Hazard Analysis in Integrated GIS Environment, 1044

Rubber
Rubber-Tire Particles as Concrete Aggregate, 729

Runoff
Asymptotic Determination of Runoff Curve Numbers from Data, 604
Engineering Hydrology, 1354
Evaluation of Runoff and Erosion Models, 606
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607

Rural areas
Solid-Waste Management: Cooperative Extension Initiative, 800

Safe yield
Conditional-Yield Operating Rules for Low-Flow Management, 1120

Safety
Comparison of Construction Safety Codes in United States and Honduras, 115
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Haunted by the Past, 1277
Performance of Utility-Trench Shoring: Case Study, 734
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045
Slope Failure Analysis Using Local Minimum Factor-of-Safety Approach, 490

Safety analysis
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070
Analysis of Back Injuries in Construction, 118
Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991

Safety engineering
Haunted by the Past, 1277

Salaries
Monitoring Well-Being of Civil Engineering Profession, 758

Salinity
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587
Saline Drain Water Reuse in Agroforestry Systems, 591

Salt water
Recycling Drainage Water in San Joaquin Valley, California, 599

Salt water intrusion
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121

Salts
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Treatment, Reuse, and Disposal of Drain Waters, 616

Sampling
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434
Managing the Data Explosion, 1237
Multimodal Simulation Method for System Reliability Analysis, 217
Sampling Sediment on a Complex Site, 1212
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157
Surface Sampling in Gravel Streams, 521

Sampling designs
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312
Sampling Sediment on a Complex Site, 1212
Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

San Francisco
Commercial Growth Management Techniques in San Francisco, 1097
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406

Sand
Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491
Critical Shear Stress of Natural Sediments, 522
Cyclic Characterization of Liquefiable Sands, 482

Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607
Force-Displacement Behavior of Flexible Plate Anchors, 409
Incipient Motion of Sand-Gravel Sediment Mixtures, 577
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Prediction of Plastic Localization Using MRS-Lade Model, 413
Stability of Granular Materials in Postpeak Softening Regime, 155
Stabilization of Jointing Sand in Block Paving, 1036
Surficial Slope Failure: A Case Study, 755
Tensile and Compressive Shaft Capacity of Piles in Sand, 489
Transport of Fine Sands by Currents and Waves, 1154
Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219
Washout of Grains from Filtered Sand and Gravel Materials, 376

Sand boils
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406

Sand filters
Slow Sand Filtration of Secondary Effluent, 338

Sand transport
Longshore Sand Transport Southeast of Bahia de Todos Santos, B.C. Mexico, 1182

Sands
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Sandwich structures
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204
High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193
Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870

Sanitary landfills
Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370

Satellite mapping
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Satellites
Application of GPS Positioning to Management of Mobile Operation, 1019
Digital Image Processing: Techniques and Applications in Civil Engineering, 1351

Saturation
Dynamic Tests of Pipe Pile in Saturated Peat, 467
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581

Saudi Arabia
Drainage Water Disposal, Jeddah, Saudi Arabia, 1146
Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104
Population Estimation of City from Aerial Photographs: Riyadh Case, 1100
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077

Scale economies
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337

Scale effect
Scaling Laws in Mechanics of Failure, 258

Scale models
Factors Affecting Conveyance in Meandering Compound Flows, 576
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939
Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544

Scattering
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Scattering of Water Waves by Vertical Cylinders, 1165
Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Scheduling
Construction Decision Support System for Delay Analysis, 95
Cost, Schedule, and Time Variances and Integration, 96
How to Make Project Schedules Really Work for You, 674
Interactive Dynamic Layout Planning, 97
Model-Based Planning: Scaled-Up Construction Application, 62
New Generation of Planning Structures, 93
Nondeterministic Networking Methods, 83
Optimal Dimensions of Bus Service Zones, 1065
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164
Prototype Integrated Cost and Schedule Control System, 61
Scheduling of Repetitive Projects with Cost Optimization, 123
Standardizing Scheduling Data Exchange, 94
Water Management in Arranged-Demand Canal, 598

Schools
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764
Incorporating Dam Break Concerns in School Site Selection, 1092
Modeling School Utilization and Consolidation, 1089

Scour
Criterion Delineating the Mode of Headcut Migration, 494
Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171
Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497
Influence of Cross Section on Wave Scour Around Piles, 1174
Merging Laboratory and Field Data in Bridge Scour, 564
Riprap Criteria below Pipe Outlet, 504
Scoping Out Scour, 1220
Stability of Riprap at Bridge Piers, 558
Three-Dimensional Calculation of Scour Around Cylinders, 556

Screening
STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Screens
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184

Sealing
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Seasonal variations
Duration and Frequency of Seasonal Traffic Counts, 1051
Longshore Sand Transport Southeast of Bahia de Todos Santos, B.C. Mexico, 1182
Spatial and Seasonal Variation of Furrow Infiltration, 585

Secondary flow
Field Measurements of Secondary Currents in Straight Rivers, 526
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499
Three-Dimensional Flow Structure at Open-Channel Diversions, 568

Sediment
Dynamic Pressure of Water and Sediment on Rigid Dam, 232
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607
Sampling Sediment on a Complex Site, 1212
Surface Sampling in Gravel Streams, 521
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Sediment concentration
Transport of Fine Sands by Currents and Waves, 1154

Sediment control
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652

Sediment load
Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325

Sediment transport
Coastal Engineering—1992, 1334
Comparison of Physical Transport Processes in Noncohesive River Sediments, 303
Critical Shear Stress of Natural Sediments, 522
Dependence of Coefficient *K* on Grain Size, 1180
Effect of Bank Stability on Geometry of Gravel Rivers, 574
Effect of Bed Surface Structure on Spherical Particle Stability, 1160
Erosion and Sedimentation Processes on Irrigated Fields, 650
Hydraulic Engineering '93, 1364
Hydraulic Jumps in Sediment-Driven Bottom Currents, 559
Incipient Motion of Sand-Gravel Sediment Mixtures, 577
Influence of Cross Section on Wave Scour Around Piles, 1174
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496
Overview of Soil Erosion From Irrigation, 649
Rotating Circular Flume, 536
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548
Stochastic Model of Particulate Transport in Porous Medium, 543
Three-Dimensional Calculation of Scour Around Cylinders, 556
Three-Dimensional Flow Structure at Open-Channel Diversions, 568
Transport of Fine Sands by Currents and Waves, 1154
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Sediment yield
Evaluation of Runoff and Erosion Models, 606
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548

Sedimentation
Erosion and Sedimentation Processes on Irrigated Fields, 650

Seepage
Design Charts for Double-Walled Cofferdams, 386
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246
Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392
Estimation and Optimization of Transient Seepage with Free Surface, 655
Maximum Saturated Depth Over Landfill Liner, 313
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562
Stability of Shale Embankments, 381
Washout of Grains from Filtered Sand and Gravel Materials, 376

Segmented elements
Arches For A Parkway, 1290
Concrete over the Connecticut, 1193

Seismic analysis
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977

Seismic cone penetration tests
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438

Seismic design
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Computing in Civil and Building Engineering, 1346
Cyclic Behavior of Moderately Deep HSC Beams, 951
Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006
Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912
Pressure Pipeline Design for Water and Wastewater, 1378
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141
Seismic Design and Performance of Composite Coupled Walls, 992
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Seismic Response of Eccentrically Braced Tall Building, 872
Seismic Retrofitting: Spending to Save, 1203
Simulation of Spatially Incoherent Random Ground Motions, 206
Site-Dependent Strength-Reduction Factors, 1004
Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809
Structural Engineering in Natural Hazards Mitigation, 1386

Seismic effects
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Seismic Bearing Capacity and Settlements of Foundations, 414
Seismic Response of and Design Aids for Arch Bridges, 973

Seismic hazard
The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294
Seismic Remediation for Earth Dams, 1308

Seismic response
Application of Hybrid Sliding Isolation System to Buildings, 272
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Composite Construction in Steel and Concrete II, 1345
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47
Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837
Failure Modes of Low-Rise Shear Walls, 143
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
Lifelike Model, 1241
Pipeline Damage Due to Wave Propagation, 463
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Response of and Design Aids for Arch Bridges, 973
Seismic Response of Eccentrically Braced Tall Building, 872
Seismic Response of R/C Frames with Irregular Profiles, 1
Seismic Response of Steel Beams Coupling Concrete Walls, 1010
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947

Sequential Coupling: New Structural Connection for Seismic Control, 816
Simulation of Spatially Incoherent Random Ground Motions, 206
Spatial Seismic Excitations and Response Spectra, 293
Toppling of Computer-Type Equipment under Base Excitation, 156
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Seismic stability
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912

Seismic studies
Seismic Remediation for Earth Dams, 1308

Seismic waves
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407

Selection
Reservoir-System Simulation and Optimization Models, 1129

Selenium
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618
Kesterson Crisis, 614
Prognosis on Managing Trace Elements, 623

Semi-rigid connections
Computer-Automated Design of Semirigid Steel Frameworks, 906
Shakedown of Frames with Semirigid Connections, 903
Stability Functions for Members with Semirigid Joint Connections, 833

Sensitivity analysis
Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032
Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369
Novel Technique for Evaluation of Advanced Anaerobic Reactors, 359
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045
Reliability-Based Optimization of Series Systems of Parallel Systems, 865
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Statistical Sensitivity Analysis of Lattice Space Structures, 31
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Sensors
Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209
Managing the Data Explosion, 1237
Motion and Path Control for Robotic Excavation, 16
Simple Model for Optimal Control of Tall Buildings, 857
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935

Sequencing batch reactor
Batch Biological Treatment of Inhibitory Substrates, 352
Biological Treatment of Wastewater from Nitrosophenol Production, 353
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305

Service loads
Service Load of Short, Large-Diameter Bored Piles, 462

Serviceability
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897
Strength Design for Reinforced-Concrete Hydraulic Structures, 1385

Services
ASCE Activities Become Global Issues, 786
Implementing TQM in Consulting Engineering Firm, 685

Settlement analysis
Correction for Settlement of Parshall Flume, 660
Deformation Analysis of Embankments, 448
Limitations of Conventional Analysis of Consolidation Settlement, 454
Pile Group Settlement Analysis by Hybrid Layer Approach, 437
Project Velacs—Control Test Results, 452
Seismic Bearing Capacity and Settlements of Foundations, 414
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412
Settlement of Pile Groups—Practical Approach, 460
Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433

Settlement control
Bored Tunneling for Singapore Metro, 7
EPB Shield Tunneling in Mixed Face Conditions, 472
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Sewage sludge
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340

Sewer design
Design of Sewers Based on Minimum Velocity, 336

Sewer pipes
Slip-Lining Solution, 1288

Sewers
The Big No-Dig, 1305
Design of Sewers Based on Minimum Velocity, 336
Microbial Ecology of Crown Corrosion in Sewers, 15
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133
Trenchless Track Record, 1274

Shaft resistance, piles
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375
Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486

Shafts
Tensile and Compressive Shaft Capacity of Piles in Sand, 489

Shake table tests
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Friction-Controllable Sliding Isolation System, 259
Neural Networks Trained by Analytically Simulated Damage States, 58

Shale
Stability of Shale Embankments, 381

Shallow foundations
Seismic Bearing Capacity and Settlements of Foundations, 414

Shallow water
Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185
Critical Depth, Velocity Profiles, and Averaging, 610
Irregular Wave-Induced Velocities in Shallow Water, 1172
Meandering Water Rivulet, 567
Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520
Round Buoyant Jet Entering Shallow Water in Motion, 575
Saline Drain Water Reuse in Agroforestry Systems, 591
Stream Function Wave Theory with Profile Constraints, 1153
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Shape
Classification of Breaking Wave Loads on Vertical Structures, 1169
Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275
Influence of Cross Section on Wave Scour Around Piles, 1174
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Shear
Cyclic Behavior of Moderately Deep HSC Beams, 951
Effect of Truck Loads on Bridges, 1082
Stress Distribution in Front Columns of High-Rise Buildings, 889
Structural Stiffness Influence on Soil Consolidation, 383

Shear deformation
Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850
Effect of Shear on Simple Buckling Problem, 213
Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828
Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171
Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870

Shear distribution
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589

Shear forces
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214

Shear lag
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164

Shear modulus
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441
Stress-History–Based Model for G^e of Cohesionless Soils, 443
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Shear strain
Observations on Higher-Order Beam Theory, 42

Shear strength
Behavior and Design of Steel Single Plate Shear Connections, 944
Cohesion Intercept in Effective Stress-Stability Analysis, 450
Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392
Shear Strength of Reinforced Concrete Deep Beams, 937
Stability of Shale Embankments, 381
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597
Surficial Slope Failure: A Case Study, 755
Tests of Fire-Resistant Bolts and Joints, 983
Tropical Clays. II: Engineering Behavior, 427
Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478

Shear stress
Critical Shear Stress of Natural Sediments, 522
Effect of Shear on Simple Buckling Problem, 213
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
Rotating Circular Flume, 536
Shear Behavior of RC Structural Walls, 847
Stability of Motions of Translational Landslides, 399
Turbulence in Rivers due to Navigation Traffic, 525

Shear tests
Anisotropy Studies on Cuboidal Shear Device, 436
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746
Failure Modes of Low-Rise Shear Walls, 143
Numerical Analysis of Drained Direct and Simple Shear Tests, 485

Shear walls
Behavior of Curtailed Wall-Frame Structures, 965
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990
Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837
Failure Modes of Low-Rise Shear Walls, 143
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894
Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884
Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838

Sheet piles
Finite Element Analyses of HDR-4 Excavation, 13

Shell structures
Analysis of Arch Dams, 892
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237
Fatigue Reliability Under Nonstationary Loads: Model Application, 945
Inelastic Behavior of Hyperbolic Cooling Tower, 933
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924
Nonlinear Analysis of Reinforced-Concrete Shells, 1001
On Loads Equivalent to Geometrical Imperfections in Shells, 158
Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279

Shellfish
Invasion of the Zebra Mussels, 1233

Shells
Hybrid Plane Quadrilateral Element with Corner Rotations, 950
Shell Finite Element Formulated on Shell Middle Surface, 266

Shields, tunneling
EPB Shield Tunneling in Mixed Face Conditions, 472

Ship motion
Report on Ship Channel Design, 1380

Shoaling
Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185

Shock waves
Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505

Shore protection
Equilibrium Shoreline Response to Breakwaters, 1187
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186

Shoring
Performance of Utility-Trench Shoring: Case Study, 734

Shotcrete
Shotcrete for Underground Support V, 1381
Shotcrete for Underground Support VI, 1382

Shrinkage
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Compacted Clay Liners and Covers for Arid Sites, 387
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
Stochastic Drying and Creep Effects in Concrete Structures, 822
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984
Time-Dependent Shortening of Slender RC Columns, 269

Siding
The Copper-Clad Library, 1284

Sight distances
Effect of Vehicle Length on Passing Operations, 1046
Lateral Clearance Needs on Compound Horizontal Curves, 1034

Signalized intersections
Knowledge-Based System for Design of Signalized Intersections, 2
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045

Signals
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045

Silica
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707

Silos
Pin Piles Save Silos, 1276

Silts
Accidents on Interstate Highways Caused by Blowing Dust, 743
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401

Silty soils
Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432

Simple shear tests
Cyclic Characterization of Liquefiable Sands, 482

Simulation
Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176
Cal Poly Model Canal, 631
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Description and Evaluation of Program: CARIMA, 634
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148
Finite Element Analyses of HDR-4 Excavation, 13
Irrrigation–Canal—Simulation Model Usage, 627
Modeling Operational Activities in Object-Oriented Simulation, 56
Modeling Subsurface Drainage and Surface Runoff with WEPP, 642
Multimodal Simulation Method for System Reliability Analysis, 217
Reservoir-System Simulation and Optimization Models, 1129
Resource-Oriented Modeling and Simulation in Construction, 117
Risk and Capacity Impacts of ATC Separation Rules, 1074
Simulating Seasonal Ground Movement in Unsaturated Clay, 446
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250
Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554
Towards a Modeling Support System for Simulation of Water Quality, 70
Vehicle Impact Simulation, 1067

Simulation models
Comparison of Two Simulation Methodologies in Construction, 116
Evaluating the Capacity of Freeway Weaving Sections, 1052
Lake Water Temperature Simulation Model, 570
Root Growth Simulation Model Under Specified Environment, 648

Sinkholes
Sinkhole Damage to Masonry Structure, 738

Site evaluation
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Site-Dependent Strength-Reduction Factors, 1004

Site investigation
Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380
Site Exploration Strategy for Geologic Anomaly Characterization, 385
Subsurface Characterization With Solid Models, 483

Site selection
Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091
Incorporating Dam Break Concerns in School Site Selection, 1092

Size
Effects of Aggregate Top Size on Bituminous Concrete, 732

Size effect
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447
Approximate Moment-Curvature Relationships for Slender Columns, 868
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Scaling Laws in Mechanics of Failure, 258
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566

Skewness
Bridge Buffeting by Skew Winds in Erection Stages, 163
Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171

Skin
Cracking in Exterior Insulation and Finish Systems, 737

Slabs
Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911
Composite Profiled Beams, 866
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Effect of Slab on Inelastic Response of R/C Buildings, 883
Moments in Deck Slabs Due to Cantilever Loads, 907
Nonlinear Finite Element Analysis of RC Slab Bridge, 811

Slenderness ratio
Slenderness of Columns in Braced Frames, 998

Slides
Numerical Simulations of Large Water Waves due to Landslides, 573

Sliding
Application of Hybrid Sliding Isolation System to Buildings, 272
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985
Stability of Motions of Translational Landslides, 399
Torsional Coupling in Sliding Base-Isolated Structures, 813

Slip
Bond and Slip of FRP Rebars in Concrete, 698
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Seismic-Induced Slip of Concrete Gravity Dams, 812
Sequential Coupling: New Structural Connection for Seismic Control, 816

Slip surface
Cohesion Intercept in Effective Stress-Stability Analysis, 450
Slope Failure Analysis Using Local Minimum Factor-of-Safety Approach, 490

Slipping
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190

Slope stability
Analysis of Delayed Failure in Sloping Excavations, 455
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447
Cohesion Intercept in Effective Stress-Stability Analysis, 450
Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392
Rational Polynomial Technique in Slope-Reliability Analysis, 487
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562
Slope Failure Analysis Using Local Minimum Factor-of-Safety Approach, 490
Stability of Shale Embankments, 381
Surficial Slope Failure: A Case Study, 755

Slopes
A Better Grade Of Grade, 1282
Characteristics of B-Jump with Different Toe Locations, 549
Correction for Settlement of Parshall Flume, 660
Design of Sewers Based on Minimum Velocity, 336

Sloshing
Dynamic Response of Tank Containing Two Liquids, 179

Sludge
Cr(III) in Activated Sludge, 306
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317
Effects of Wastewater Composition on Stability of UASB, 358
Exchanging Wastes, 1287
Manufacture of Cement from Sewage Sludge, 697
Mechanisms for Overdosing in Sludge Conditioning, 307
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329
Permeability Behavior of a Water Treatment Sludge, 474
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330
Sludge Under Pressure, 1198

Sludge digestion
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305

Sludge disposal
Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091

Sludge treatment
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Sludge Under Pressure, 1198

Small structures
Short-Span Bridge Solutions, 1255

Snowmelt
Acidification Potential of Snowpack in Sierra Nevada, 12
Revised Surface-Water Supply Index for Western United States, 1128

Snowpacks
Acidification Potential of Snowpack in Sierra Nevada, 12

Soaking
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Social impact
Decision Analysis of Alternative Highway Alignments, 1049
Hazmat Transport Risks: Societal and Individual Perspectives, 1039

Social needs
Engineering: Environmental vs. Developmental Goals, 1218
Governmental Priorities in Irrigation Project Selection in Indonesia, 1125
Relevant Engineering in 21st Century, 778

Social values
Practice of Professionalism, 761

Soft soils
Banking on a Bridge, 1219
EPB Shield Tunneling in Mixed Face Conditions, 472
Fast Foundation for Soft Clay, 1215

Softening
Compression Response of Cracked Reinforced Concrete, 1009
Stability of Granular Materials in Postpeak Softening Regime, 155

Soil classification
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380

Soil compaction
Compacted Clay Liners and Covers for Arid Sites, 387
Stress-History–Based Model for G^e of Cohesionless Soils, 443

Soil conditions
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880

Soil deformation
Plate-Load Tests of Collapsible Soils, 411
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379

Soil dynamics
Approximate Green's Function for Surface Foundations, 464
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430

Soil erosion
Erosion and Sedimentation Processes on Irrigated Fields, 650
Furrow Irrigation Erosion Lowers Soil Productivity, 651
Overview of Soil Erosion From Irrigation, 649
Scoping Out Scour, 1220

Soil layers
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473

Soil loss
Overview of Soil Erosion From Irrigation, 649

Soil mechanics
Design Charts for Double-Walled Cofferdams, 386
New Perspectives on Soil Creep, 404
Sinkhole Damage to Masonry Structure, 738
Unsaturated Soils, 1390

Soil modulus
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Soil pollution
Hydrocarbon Exclusion from Ground Water During Freezing, 344

Soil properties
Analysis of Deep Excavation in Boston, 378
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Estimating Autocovariance of In-Situ Soil Properties, 382

Soil settlement
Banking on a Bridge, 1219

Soil stability
Stability of Motions of Translational Landslides, 399

Soil stabilization
Fly Ash for Soil Improvement, 1356
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425

Soil structure
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590

Soil suction
Evaluation of In-Place Wetting Using Soil Suction Measurements, 428
Stability of Shale Embankments, 381

Soil swelling
Swelling Soils, 423

Soil tests
Expansion Potential According to *Uniform Building Code*, 442
Swelling Soils, 423

Soil treatment
STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Soil water
Application of SHE for Irrigation-Command-Area Studies in India, 582
Frost Action in a Hydrophobic Material, 49
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Soil water movement
Capillary-Tube Infiltration Model, 617
Soil-Water Distribution under Trickle Source, 615

Soil-pile interaction
Impedance Functions of Piles in Inhomogeneous Media, 458
Pile Group Settlement Analysis by Hybrid Layer Approach, 437
Piled Rafts in Swelling or Consolidating Soils, 397
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379
Rational Mechanics of Axial Soil-Pile Interaction, 196
Simplified Approach for Pile and Foundation Interaction Analysis, 461

Soil-pipe interaction
Frost Heave Induced Mechanics of Buried Pipelines, 488
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Pipeline Infrastructure II, 1376

Soils
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Electrical Response of Two-Phase Soil: Theory and Applications, 451
Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471
Frost Action in a Hydrophobic Material, 49
Geochemical Factors Affecting Trace Element Mobility, 645
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350
Response of Long-Span Soil-Metal Structures, 836
Seismic Bearing Capacity and Settlements of Foundations, 414
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590
Stability of Granular Materials in Postpeak Softening Regime, 155
Whose Risk Is It, Anyway?, 1285

Soils, unsaturated
Evaluation of In-Place Wetting Using Soil Suction Measurements, 428
Simulating Seasonal Ground Movement in Unsaturated Clay, 446
Unsaturated Soils, 1390

Soil-structure interaction
Approximate Green's Function for Surface Foundations, 464
Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395
Behavior of Cantilever Retaining Walls, 479
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10
Green's Functions for Transversely Isotropic Elastic Half Space, 251
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947
Structural Stiffness Influence on Soil Consolidation, 383
Vertical Earth Loads on Buried Engineered Works, 403

Solid waste disposal
Cost-Effective Solid-Waste Characterization Methodology, 339
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425
A Solid Waste Solution, 1251

Solid waste management
Cost-Effective Solid-Waste Characterization Methodology, 339
Framework for Assessment of Recycle Potential Applied to Plastics, 348
Geosynthetics Conquer the Landfill Law, 1301
A Solid Waste Solution, 1251
Solid-Waste Management: Cooperative Extension Initiative, 800

Solid wastes
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312

Solidification
Measurement of Effective Diffusivities in Solidified Wastes, 299
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Solitary wave
Diffraction of Solitary Waves by Breakwaters, 1150
Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166

Solutes
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332
Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Sorption
Influence of Surface Finish on Sorptivity on Concrete, 705
Predicting Release of PCBs at Point of Dredging, 302
Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332
Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

South Africa
South Africa at the Crossroads, 1323

South Carolina
Closing the Loop, 1259

Space frames
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180
Nonlinear Analysis of Space Frames with Finite Rotations, 806
Stability Functions for Members with Semirigid Joint Connections, 833

Space structures
Integrated Genetic Algorithm for Optimization of Space Structures, 36
Statistical Sensitivity Analysis of Lattice Space Structures, 31
Structural and Orbital Conditions on Response of Large Space Structures, 23
Technology Assessment and Development of Large Deployable Antennas, 18

Space truss
Bridge to the Future, 1189
Experimental Study of Behavior of Composite Space Trusses, 848

Spacecraft
Use Value Engineering Concepts for Spaceport Launching, 24

Spacecraft launching sites
Use Value Engineering Concepts for Spaceport Launching, 24

Spacing
Subsurface Drainage System Design and Drain Water Quality, 619

Spalling
Mathematics of Concrete Scaling, 716

Spatial analysis
Integrated Hydrologic Modeling with Geographic Information Systems, 1108
Potential Applications of Geographic Information Systems to Construction Industry, 85
Spatial and Seasonal Variation of Furrow Infiltration, 585

Spatial data
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287
Development and Application of Expert Geographic Information System, 69
Estimating Autocovariance of In-Situ Soil Properties, 382
Expert Geographic Information System for Texas Water Planning, 1111
Geographic Information Systems in Urban Stormwater Management, 1113
GIS and Storm-Water Management, 1278
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Implementation of GIS for Water Resources Planning and Management, 1112
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502
Predicting Water-Main Breakage Rates, 1127
Spatial Seismic Excitations and Response Spectra, 293
Toward Spatial Decision Support Systems in Water Resources, 1110

Spatial distribution
Optimal Management Strategies for Cutback Furrow Irrigation, 662

Specific energy
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595
Nonunique Water-Surface Profiles in Open Channels, 579

Specifications
Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330
Computer Scheduling and Construction Specs, 1254
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981
History of Steel Beam-Column Design, 835
Importance of Teaching Construction Contract Specifications, 772
Need for Specification Format that Accommodates Engineered Projects, 128
Questioning Composites, 1195
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383
Spotting Specs Offenders, 1209

Spectral analysis
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Response of Eccentrically Braced Tall Building, 872
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947

Spectral density function
Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153

Speech recognition
Speech-Based Data-Entry Systems for Construction, 73

Spheres
Effect of Bed Surface Structure on Spherical Particle Stability, 1160

Spherical shells
Thermal Stresses in Spherical Shells, 22

Spillways
Energy Dissipation on Stepped Spillways, 529
Riprap Criteria below Pipe Outlet, 504
Self-Aerated Flows on Chutes and Spillways, 506

Splitting
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447

Spoilers
Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171

Spraying
Position-Force Adaptive Control for Construction Robots, 27

Sprinkler irrigation
Erosion and Sedimentation Processes on Irrigated Fields, 650
Hydraulics of Irrigation Laterals: Comparative Analysis, 586
Overview of Soil Erosion From Irrigation, 649
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590

Stability
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Criterion Delineating the Mode of Headcut Migration, 494
Design Charts for Double-Walled Cofferdams, 386
Effect of Bed Surface Structure on Spherical Particle Stability, 1160
Effects of Wastewater Composition on Stability of UASB, 358

Experimental Study of Behavior of Composite Space Trusses, 848
False Paradox of Torsional Buckling, 1013
Instability of Granular Soils Under Strain Path Testing, 429
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Lower Bounds for Critical Buckling Load Using Matrix Norms, 212
Meandering Water Rivulet, 567
Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486
New Approach to Buckling of Imperfection-Sensitive Structures, 198
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264
Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265
Propagating Instabilities in Long Shallow Panels, 181
Requirements for Lateral Bracing of Columns with Two Spans, 970
Stability of Active-Tendon Structural Control with Time Delay, 207
Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279
Stability of Granular Materials in Postpeak Softening Regime, 155
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902
Stability of Motions of Translational Landslides, 399
Stability of Nonsymmetric Cross-Bracing Systems, 815
Stability of Pitched-Roof Frames in National Building Codes, 980
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193
Stability of Riprap at Bridge Piers, 558
Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540
Washout of Grains from Filtered Sand and Gravel Materials, 376
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Stability analysis

Lumped-Parameter Approach to Stability Analysis, 273
Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544
Stability Functions for Members with Semirigid Joint Connections, 833
Verification of Theory of Roll-Wave Formation, 537

Stability criteria

Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480

Stabilization

Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037
Permeability Behavior of a Water Treatment Sludge, 474
Simple Method to Stabilize I-Beams Against Lateral Buckling, 966
Stabilization of Jointing Sand in Block Paving, 1036
Surficial Slope Failure: A Case Study, 755

Stadiums

A Dome To Remember, 1292
Fast-Track Stadium, 1204

Stainless steel

Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941

Standardization

Data Validation Practices and Risk Assessment, 1214
Need for Specification Format that Accommodates Engineered Projects, 128
Standardizing Scheduling Data Exchange, 94

Standards

ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357
Infratechnologies: Tools For Innovation, 1297
Measurement of Oxygen Transfer in Clean Water, 1371
Plastics Composites for 21st Century Construction, 1377
Public Safety—Is it Compromised by New LRFD Design Standards?, 876
What's In It for Me?, 1310
Whistle-Blowing—A Professional Responsibility, 759

Standing waves

Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

State government

Small-Government GIS, 1243

State-of-the-art reviews

Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079

Static loads

Behavior of Large Bored Piles in Fuzhou, 408

Static structural analysis

Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Doubly Symmetric Tube Structures. I: Static Analysis, 919

Static tests

Field Tests of Anchors in Clay. I: Description, 465

Stationary processes

Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288
Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167

Statistical analysis

Conditional-Yield Operating Rules for Low-Flow Management, 1120
Criteria for Evaluation of Watershed Models, 611

Development of Regression Models with Below-Detection Data, 310
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312
A New Point Estimate Method for Water Resources Modeling, 572
Pipeline Damage Due to Wave Propagation, 463
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402
The Proof is in the Pavement, 1267
Quality Improvement Experiences in E/A Firm, 682
Seismic-Induced Slip of Concrete Gravity Dams, 812
Service Load of Short, Large-Diameter Bored Piles, 462

Statistical data

Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155

Statistical distributions

Blunder Detection and Data Snooping in LS and Robust Adjustments, 1023

Statistical models

Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Masonry Productivity Forecasting Model, 91

Statistics

Estimating Autocovariance of In-Situ Soil Properties, 382
Joint Distribution of Large Wave Heights and Associated Periods, 1162

Steady state

Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Progressive Failure of Lower San Fernando Dam, 393
Steady State Fluid Network Analysis, 518

Steel

Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921
Bridge to the Future, 1189
Composite Construction in Steel and Concrete II, 1345
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888
Direct Analysis of Slender Columns with P-Delta Effects, 855
Eccentric Connection Design: Geometric Approach, 839
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
History of Steel Beam-Column Design, 835
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278
Performance of Deep-Corrugated Steel Box-Type Culvert, 400
Pittsburgh Goes International, 1190
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172
Seismic Response of Steel Beams Coupling Concrete Walls, 1010
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Study on Residual Stress Relief of Welded Structural Steel Joints, 715
Tests of Fire-Resistant Bolts and Joints, 983
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984
Ultimate Load Capacity of Single Steel Angles, 821
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

Steel columns

Buckling Fire Endurance of Steel Columns, 904

Steel fibers

Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726

Steel frames

All Dressed Up, 1272
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Computer-Automated Design of Semirigid Steel Frameworks, 906
The Copper-Clad Library, 1284
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
Stability Functions for Members with Semirigid Joint Connections, 833
Steel Exoskeleton Defines Architecture, 1260

Steel pipe piles

Dynamic Tests of Pipe Pile in Saturated Peat, 467

Steel pipes

Plastic Piling, 1227

Steel plates

Behavior and Design of Steel Single Plate Shear Connections, 944
Effective Width of Locally Buckled Plates in Compression and Bending, 882
Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837

Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838

Steel structures

Closing the Loop, 1259

Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Eccentrically Connected Cleat Plates in Compression, 849

Fatigue Damage to Steel Bridge Diaphragms, 751

Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908

Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909

Joint Effects on Behavior of Transmission Towers, 845

KBES for Design of Steel Structural Elements, 52

Marine Component Fatigue Reliability, 932

Optimum Design of Unstiffened Built-Up Girders, 963

Public Safety—Is it Compromised by New LRFD Design Standards?, 876

Sequential Coupling: New Structural Connection for Seismic Control, 816

Steel Exoskeleton Defines Architecture, 1260

Steel Penstocks, 1384

Stiffeners

Plastic Tripping of Ring Stiffeners, 898

Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264

Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265

Simple Method to Stabilize I-Beams Against Lateral Buckling, 966

Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149

Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279

Tests of Profiled Steel Decks with V-Stiffeners, 936

Stiffening

Rating and Preliminary Analysis of Suspension Bridges, 956

Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Stiffness

Approximate Moment-Curvature Relationships for Slender Columns, 868

Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901

Direct Analysis of Slender Columns with P-Delta Effects, 855

Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240

Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981

Effects of Aggregate Top Size on Bituminous Concrete, 732

Fatigue Behavior of High-Performance Concrete, 703

Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262

Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894

Minimum Lateral Stiffness for Equally Spaced Braces in Columns, 261

Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712

Postbuckling Analysis of Stiffened Laminated Box Columns, 150

Postbuckling and Hysteresis Models of Open-Web Girders, 853

Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274

Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809

Structural Stiffness Influence on Soil Consolidation, 383

Stiffness matrix

Complete Stiffness Matrices for Buckling Analysis of Frames, 161

Lower Bounds for Critical Buckling Load Using Matrix Norms, 212

Lumped-Parameter Approach to Stability Analysis, 273

Parallel Connecting Beams for Equivalent Structures, 986

Stability Functions for Members with Semirigid Joint Connections, 833

Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870

Stiffness methods

Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421

Stilling basins

Energy Dissipation on Stepped Spillways, 529

Protection Against Scour at SAF Stilling Basins, 501

Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544

Stochastic models

Diagnostic Checking in Stochastic Dynamic Programming, 1131

Effect of Vehicle Length on Passing Operations, 1046

Evaluating Artificial Recharge Needs of Aquifer, 1137

Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605

Stochastic Model of Particulate Transport in Porous Medium, 543

Stochastic Optimization Models for Structural-Reliability Analysis, 818

Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Stochastic processes

Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205

Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288

Serviceability Design in LRFD for Wood, 1012

Stoke's law

Pressure and Set Down for Higher-Order Stokes Waves on Current, 1175

Storage facilities

Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352

Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329

Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Storage tanks

Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10

Dynamic Response of Tank Containing Two Liquids, 179

Fatigue Reliability Under Nonstationary Loads: Model Application, 945

Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407

Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319

Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475

Storm runoff

Asymptotic Determination of Runoff Curve Numbers from Data, 604

Runoff As A Resource, 1286

Storm sewers

Design and Construction of Urban Stormwater Management Systems, 1348

Storms

Accidents on Interstate Highways Caused by Blowing Dust, 743

Convolution Method for Time-Dependent Beach-Profile Response, 1159

Non-Gaussian Properties of Second-Order Random Waves, 168

System Reliability Concepts in Design of Transmission Lines, 823

Stormwater management

Design and Construction of Urban Stormwater Management Systems, 1348

Geographic Information Systems in Urban Stormwater Management, 1113

GIS and Storm-Water Management, 1278

Runoff As A Resource, 1286

Shelter from the Storm, 1245

Strain

Analysis of Arch Dams, 892

Analytical Crack Model for Reinforced-Concrete Structures, 881

Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810

Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201

Frost Heave Induced Mechanics of Buried Pipelines, 488

Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289

Instability of Granular Soils Under Strain Path Testing, 429

Large-Strain Analysis of Reinforced Membranes, 294

Numerical Analysis of Drained Direct and Simple Shear Tests, 485

Permanent Deformation in Asphalt Concrete, 704

Response of Continuous Pavements to Moving Dynamic Loads, 253

Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480

Strain energy

Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862

Parallel Connecting Beams for Equivalent Structures, 986

Strain hardening

Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277

Strain rate

Fatigue Behavior of High-Performance Concrete, 703

New Perspectives on Soil Creep, 404

Notch Sensitivity of First-Year Sea Ice, 226

Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432

Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Strain softening

Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235

Progressive Failure of Lower San Fernando Dam, 393

Why Direct Tension Test Specimens Break Flexing to the Side, 867

Strategic planning

Analyzing Competitive Position in the Construction Market of Eastern Europe, 664

Marketing Strategies for Engineers, 1370

Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130

Trick Plays and Traps, 1249

Stratification

Energetic Bubble Plumes in Arbitrary Stratification, 532

Reservoir Destratification via Mechanical Mixers, 519

Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Vertical Distribution of Particles in Stratified Lake, 326

Stratified flow

Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513

Stream channels

Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Stream function

Stream Function Wave Theory with Profile Constraints, 1153

Streambeds

Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104

Surface Sampling in Gravel Streams, 521

Streams

Land Use, Climate and Water Supply, 1145

Strength

Bolted Connection Design Values Based on European Yield Model, 929

Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807

Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Cracking in Exterior Insulation and Finish Systems, 737
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941
Moment-Curvature Relationships for Dented Tubular Sections, 852
Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
RC Frame Connections Rehabilitated by Jacketing, 886
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905
Stability and Strength of Rigid and Semirigid Plane Frameworks, 28
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900
Strength Design for Reinforced-Concrete Hydraulic Structures, 1385
Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856
Three-Dimensional Model for Wood-Pole–Strength Predictions, 931

Stress

Analysis of Arch Dams, 892
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957
Analytical Crack Model for Reinforced-Concrete Structures, 881
Calculation of Compound-Open-Channel Flow, 578
Compression Response of Cracked Reinforced Concrete, 1009
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Cyclic Response of Axially Loaded Pile Groups, 457
Delamination Characteristics around Hole in Laminates with Softening Strip, 29
Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
Green's Functions for Transversely Isotropic Elastic Half Space, 251
Half-Plane Crack Under Normal Load: Complete Solution, 281
Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842
Improved Method for Determining Interfacial Stresses in Composites, 21
Numerical Analysis of Drained Direct and Simple Shear Tests, 485
Optimum Design of Three-Dimensional Framework Structures, 846
Plasticity Model for Transversely Isotropic Materials, 192
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861
Response of Continuous Pavements to Moving Dynamic Loads, 253
Seismic Design and Performance of Composite Coupled Walls, 992
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935
Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484
Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Stress analysis

Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182
Analysis of Laminated Glass Units, 895
Object-Oriented Finite Element Analysis Using EER Model, 962
On Loads Equivalent to Geometrical Imperfections in Shells, 158
Stress Analysis of Borehole in Poroelastic Medium, 220

Stress concentration

High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204

Stress distribution

Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173
Stress Distribution in Front Columns of High-Rise Buildings, 889

Stress history

Stress-History–Based Model for G^e of Cohesionless Soils, 443

Stress intensity factor

Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Stress relaxation

Time-Dependent Response of Three-Filament Cord, 197

Stress strain diagrams

Concrete Toughness After 20 Years, 885

Stress strain relations

Proportional Strain Tests of Fresh-Water Ice Rubble, 46
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000

Stress strain relations, soils

General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151

Stripping

Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730

Recyclability of Moisture Damaged Flexible Pavements, 731

Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Structural analysis

Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921

Analysis of Arch Dams, 892

Analysis of Building Frames, 831

Analysis of Multiple-Bay Frames Using Continuum Model, 834

Analytical Crack Model for Reinforced-Concrete Structures, 881

Applications of Fiber Optic Sensors in Engineering Mechanics, 1326

Approximate Moment-Curvature Relationships for Slender Columns, 868

Behavior of Curtailed Wall-Frame Structures, 965

Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990

Crack-Induced Changes in Eigenparameters of Beam Structures, 255

Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295

High-Performance Computing in Structural Mechanics and Engineering, 32

Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828

Lower Bounds for Critical Buckling Load Using Matrix Norms, 212

New Approach to Buckling of Imperfection-Sensitive Structures, 198

Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869

Rating and Preliminary Analysis of Suspension Bridges, 956

Rigidities of Horizontally Curved, Flat Structures, 948

Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870

Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935

Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058

Use of Structural Analysis Programs in Consulting, 802

Viscoelastic Heterogeneous Structures with Variable Structural System, 162

XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Structural behavior

Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875

Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807

Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808

Plastic Potential, 1265

Review of Methods for Analyzing Constrained-Layer Damped Structures, 33

Simplified Method for Dynamic Response of Tapered Structure, 236

Structural Behavior of Architectural Laminated Glass, 817

Structural control

Full-Scale Implementation of Active Control. II: Installation and Performance, 917

Structural design

Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330

Cable-Stayed Convention Center, 1201

Closing the Loop, 1259

Composite Construction in Steel and Concrete II, 1345

History of Steel Beam-Column Design, 835

Masonry Carries the Load, 1208

Multiobjective Optimization of Prestressed Concrete Structures, 851

Nonmonotonic Reasoning in Design, 53

Optimum Design of Unstiffened Built-Up Girders, 963

Questioning Composites, 1195

Reliability-Based Optimization of Series Systems of Parallel Systems, 865

Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987

Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988

Statistical Sensitivity Analysis of Lattice Space Structures, 31

Structural dynamics

Bridge Buffeting by Skew Winds in Erection Stages, 163

Efficiency of Vibrational Energy Dissipation by Moving Shot, 955

Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296

Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297

Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267

Optimal Direct Output Feedback of Structural Control, 276

Problematics in Formulation of Wind-Force Models for Bridge Decks, 229

Structural elements

Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200

KBES for Design of Steel Structural Elements, 52

Masonry Carries the Load, 1208

Octree Subdivision of Building Elements, 75

Risk-Based Bridge Management, 1076

Structural engineering

Colorado Dome, 1246

High-Performance Computing in Structural Mechanics and Engineering, 32

Response of Long-Span Soil-Metal Structures, 836

System Flexibility and Reflected Pressures, 35

Structural failures

Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854

Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753

Effect of Member Snap on Space Truss Collapse, 199

Failure of Engineered Facilities: Academia Responds to the Challenge, 745

Introduction to Structural Failure Modes for Nuclear Power Facilities, 140

Structural members

False Paradox of Torsional Buckling, 1013

Finite Element Method for Buckling Analysis of Plate Structures, 864

Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995

History of Steel Beam-Column Design, 835

Local Buckling of FRP Beams and Columns, 720

Lumped-Parameter Approach to Stability Analysis, 273

Moment-Curvature Relationships for Dented Tubular Sections, 852

Optimum Design of Three-Dimensional Framework Structures, 846

Public Safety—Is it Compromised by New LRFD Design Standards?, 876

Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008

Structural models

Use of Structural Analysis Programs in Consulting, 802

Structural reliability

After the Blast, 1230

Fatigue Reliability under Nonstationary Loads: Model Formulation, 843

Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991

Markov Model for Seismic Reliability Analysis of Degrading Structures, 912

Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896

Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205

Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288

Public Safety—Is it Compromised by New LRFD Design Standards?, 876

Reliability of Wood Structural Systems, 954

Selection of Random Field Mesh in Finite Element Reliability Analysis, 187

Structural response

Gust Buffeting. II: Dynamic Alongwind Response, 826

Structural and Orbital Conditions on Response of Large Space Structures, 23

Structural Response of Full-Scale Concrete Box Culvert, 989

Structural safety

Full-Scale Implementation of Active Control. II: Installation and Performance, 917

Getting Along: The Geotech and the CM, 1256

Structural settlement

Evaluation of In-Place Wetting Using Soil Suction Measurements, 428

Structural stability

Lumped-Parameter Approach to Stability Analysis, 273

Minimum Lateral Stiffness for Equally Spaced Braces in Columns, 261

Postbuckling Analysis of Stiffened Laminated Box Columns, 150

Structural strength

Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861

System Reliability Concepts in Design of Transmission Lines, 823

Structure reinforcement

Bond and Slip of FRP Rebars in Concrete, 698

Placement-Oriented Design and Delivery of Concrete Reinforcement, 100

Structures

Neural Networks Trained by Analytically Simulated Damage States, 58

Simple Friction Model for Scissor-Type Mobile Structures, 175

Simplified Method for Dynamic Response of Tapered Structure, 236

Structural Stiffness Influence on Soil Consolidation, 383

Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Struts

Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431

Students

Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764

Civil Engineering Evolution, 757

Design Projects in Civil Engineering Curriculum, 793

Different Perceptions of Importance of Educational Objectives, 794

Ethical Issues Experienced by Engineering Students and Practitioners, 801

Strategy for Passing the Civil P.E. Exam, 788

Testing and Counseling in Assisting Students in Career Selection, 766

Studs

Behavior of Cold-Formed Steel Wall Stud Assemblies, 841

Subcritical flow

Comprehensive Open-Channel Expansion Transition Design, 580

Subdivisions

Determination of Most Representative Residential Subdivision, 138

Subgrades

Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395

Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078

Prediction of Bedding Intrusion into Low-Strength Subgrades, 396

Subirrigation

Agronomic and Environmental Benefits of Water-Table Management, 658

Submarine pipelines

Design of a Submarine Oil Pipeline, 1038

Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171

Submerged flow

Hydraulic Jumps in Sediment-Driven Bottom Currents, 559

Subsidence

Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384

Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481

Subsidies, financial

Land-Grant Policy and Engineering Education, 805

Substrates

Batch Biological Treatment of Inhibitory Substrates, 352

Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355

Substructures

Recycling on the Mississippi, 1207

Subsurface drainage

Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594

Drainage Water Disposal, Jeddah, Saudi Arabia, 1146

Maximum Saturated Depth Over Landfill Liner, 313

Modeling Subsurface Drainage and Surface Runoff with WEPP, 642

Subsurface drains

Changes in Entrance Resistance of Subsurface Drains, 624

Subsurface investigations

Estimating Autocovariance of In-Situ Soil Properties, 382

Fast Foundation for Soft Clay, 1215

Probing the Port of Los Angeles, 1196

Spatial Data Models for Managing Subsurface Data, 65

Sulfides

Microbial Ecology of Crown Corrosion in Sewers, 15

Sulfur

Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373

Sorption and Desorption of Dyes by Sulfonated Coal, 320

Sulfur dioxide

Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Supercritical flow

Incipient Hydraulic Jump at Channel Junctions, 516

Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505

Supervision

Effective Management in Computerized SCADA System, 668

Supports

Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850

Surcharge

Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433

Surface jets

Detachment of Buoyant Surface Jets Discharged on Slope, 545

Surface roughness

Generalized Inner Region Velocity Distribution Equation, 530

Surface runoff

DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68

Modeling Subsurface Drainage and Surface Runoff with WEPP, 642

Surface tension

Meandering Water Rivulet, 567

Surface waters

Acidification Potential of Snowpack in Sierra Nevada, 12

Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107

Integrated Hydrologic Modeling with Geographic Information Systems, 1108

Performance of Historic Adobe Structure, 747

Revised Surface-Water Supply Index for Western United States, 1128

Water-Quality Modeling with EPA Reach File System, 1116

Surface waves

Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324

Alternative Form of Boussinesq Equations for Near-shore Wave Propagation, 1185

Analysis of Wave Scattering by Submerged Circular Disk, 256

Automated Surface Wave Method: Field Testing, 444

Automated Surface Wave Method: Inversion Technique, 445

Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156

Second-Order Radiation Condition for Surface Wave–Body Interaction, 216

Surveying

ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022

GPS—Rapid Solutions for Transportation Management, 1016

Use of Laser Targeting in Precise Machinery Surveys, 1018

Surveys, data collection

Construction Cost Factors in Nigeria, 124

Engineering Women: A View From the Workplace, 663

Faculty Attitudes about Progress of Metrication, 776
Too Many Failures: What Can Education Do?, 744

Suspended sediments
Vertical Distribution of Particles in Stratified Lake, 326

Suspended solids
Predicting Release of PCBs at Point of Dredging, 302

Suspension
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Swelling
Swelling Soils, 423
Unsaturated Soils, 1390

Swelling pressure
Swelling Soils, 423

System analysis
Assessing Potential for Superhub Airport for California, 1071
Misesian Assessment of Systems Analysis, 797

System reliability
Multimodal Simulation Method for System Reliability Analysis, 217
Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106
Reliability of Wood Structural Systems, 954
Stochastic Optimization Models for Structural-Reliability Analysis, 818
System Reliability Concepts in Design of Transmission Lines, 823

Systems
Damage Detection in Composite Materials Using Identification Techniques, 39
Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240
Viscoelastic Heterogeneous Structures with Variable Structural System, 162

Systems engineering
Builders as Sources of Construction Innovation, 113
Misesian Assessment of Systems Analysis, 797
Reliability-Based Optimization of Series Systems of Parallel Systems, 865

Tailings
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Tailwater
Riprap Criteria below Pipe Outlet, 504

Tall buildings
After the Blast, 1230
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Behavior of Curtailed Wall-Frame Structures, 965
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863
Long-Term Shortening of Concrete Columns in Tall Buildings, 934
Seismic Response of Eccentrically Braced Tall Building, 872
Simple Model for Optimal Control of Tall Buildings, 857
Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Tanks
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252

Taper
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415
Simplified Method for Dynamic Response of Tapered Structure, 236

Taxes
Keeping the Books: A Taxing Task, 1307

Teamwork
Collaboration in the Engineering Classroom, 791
Documented Constructability Savings for Petrochemical-Facility Expansion, 735
Effective Total Quality Management (TQM) Process, 693
Essential Tools of Total Quality Management, 684
Runway Rehab: A Case for CADD, 1242
Spotting Specs Offenders, 1209
Taking the Pain out of the Punch List, 1268
Total Quality Management at Construction Jobsites, 688

Technology
The Big No-Dig, 1305
Engineering Sustainable Development, 1279
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357
Imaging the Future, 1306
Japanese Building Design and Construction Technologies, 798
Making the Leap, 1247
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114
Technology in Marine Construction Firms, 90
Trenchless Track Record, 1274

Technology assessment
Advanced Construction Technology System—ACTS, 98
Canada's Environmental Review of the North American Free Trade Agreement, 785
Human Factors in Civil and Geotechnical Engineering Failures, 388
Technology Assessment and Development of Large Deployable Antennas, 18
World Engineering Partnership for Sustainable Development, 783

Technology transfer
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099
Managing Implementation of Change, 687
Solid-Waste Management: Cooperative Extension Initiative, 800

Telecommunication
Application of GPS Positioning to Management of Mobile Operation, 1019

Temperature
Creep Behavior of Saline Fine-Grained Frozen Soil, 48
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317
Lake Water Temperature Simulation Model, 570

Temperature distribution
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151
Thermal Actions for Concrete Bridge Design, 938
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Temperature effects
Analysis of Concave Curling in Concrete Slabs, 1068
Buckling Fire Endurance of Steel Columns, 904
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Study on Residual Stress Relief of Welded Structural Steel Joints, 715
Tests of Fire-Resistant Bolts and Joints, 983
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696
Thermomechanical Properties of Epoxy Mortars, 709
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Temporary structures
Interactive Dynamic Layout Planning, 97

Tendons
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957
Bonded Tendon Debate, 1266

Tennessee
Arches For A Parkway, 1290

Tensile loading
Tensile and Compressive Shaft Capacity of Piles in Sand, 489

Tensile strength
Behavior of Chemically Bonded Anchors, 961
Characterization of Polyester Polymer and Polymer Concrete, 701
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711
Ranking PVC Roofing Membranes Using Thermal Analysis, 702
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Tensile stress
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8
Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964

Tension
Analytical Crack Model for Reinforced-Concrete Structures, 881
Behavior of Arc Spot Weld Connections in Tension, 930
Damage Model for Concrete Using Bounding Surface Concept, 260
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Nonlinear Analysis of Reinforced-Concrete Shells, 1001
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Tension leg platforms
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153
Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Terminal facilities
MASSPORT Modernization, 1223

Terminology
What Do You Mean by That?, 1226

Terrain models
Subsurface Characterization With Solid Models, 483

Tertiary treatment
Slow Sand Filtration of Secondary Effluent, 338

Testing
Characterization of Polyester Polymer and Polymer Concrete, 701
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434
Notch Sensitivity of First-Year Sea Ice, 226
Predicting Release of PCBs at Point of Dredging, 302
Strategy for Passing the Civil P.E. Exam, 788
Testing and Counseling in Assisting Students in Career Selection, 766
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953
Why Direct Tension Test Specimens Break Flexing to the Side, 867

Tests
Behavior and Design of Steel Single Plate Shear Connections, 944
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875
The Bicycle Wheel as Prestressed Structure, 174
Blind Bolting W-Shape Beams to HSS Columns, 1002

Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941
Mechanics and Failure of Multilayer, Reinforced Membranes, 717
Nonlinear Analysis of Reinforced-Concrete Shells, 1001
Permanent Deformation in Asphalt Concrete, 704
Rigidities of Horizontally Curved, Flat Structures, 948
Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330
Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058
Tests of Profiled Steel Decks with V-Stiffeners, 936
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238
Wave Attenuation by Vegetation, 1149

Texas

Building the SSC: A Texas-Sized Challenge, 1263
DART'S ASAP EIS, 1264
A Dome To Remember, 1292

Theories

Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155
Observations on Higher-Order Beam Theory, 42
Shell Finite Element Formulated on Shell Middle Surface, 266
Theory and History of Suspension Bridge Design from 1823 to 1940, 860
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Thermal analysis

Ranking PVC Roofing Membranes Using Thermal Analysis, 702

Thermal factors

Thermal Actions for Concrete Bridge Design, 938
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Thermal properties

Recycling Plastics in Polymer Concrete for Construction Applications, 713

Thermal resistance

Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Thermal stratification

Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512

Thermal stresses

Analysis of Concave Curling in Concrete Slabs, 1068
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151
Thermal Stresses in Spherical Shells, 22

Thermoelectric power generation

Information Management Power Station Construction at Stanwell, 667

Thickness

Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221
Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148
Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171

Thin shell structures

Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248
On Loads Equivalent to Geometrical Imperfections in Shells, 158
Shell Finite Element Formulated on Shell Middle Surface, 266

Thin wall sections

Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194
Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149

Thin wall structures

Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837
False Paradox of Torsional Buckling, 1013
Finite Element Method for Buckling Analysis of Plate Structures, 864

Three-dimensional analysis

Attitude Determination with Ashtech 3-D Direction Finding System, 1015
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718
Three-Dimensional Calculation of Scour Around Cylinders, 556

Three-dimensional flow

Hydrodynamic Behavior of Compound Rectangular Open Channels, 515
Three-Dimensional Flow Structure at Open-Channel Diversions, 568

Three-dimensional models

Hydraulic Engineering '93, 1364
Integration of Engineering, Design, and Construction, 14
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523
Subsurface Characterization With Solid Models, 483
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361
Three-Dimensional Model for Wood-Pole–Strength Predictions, 931
Using GPS Results in True 3-D Coordinate System, 1014
Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Tidal hydraulics
Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528
Hydraulic Engineering '93, 1364

Tidal waters
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121

Timber construction
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877
Experimental Study of Timber Trusses and Joints, 878
Reliability of Wood Structural Systems, 954
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900
Twenty-First Century Timber Engineering, 1389

Timbers
Behavior of Composite Timber-Concrete Floors, 982
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

Time dependence
Convolution Method for Time-Dependent Beach-Profile Response, 1159
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Dynamic Compaction of Saturated Porous Columns, 241
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244
Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288
Regionalized Partial-Duration Balanced-Hydrograph Model, 657
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984
Time-Dependent Response of Three-Filament Cord, 197
Time-Dependent Shortening of Slender RC Columns, 269
Viscoelastic Heterogeneous Structures with Variable Structural System, 162

Time factors
Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230
Predicting Water-Main Breakage Rates, 1127
Stability of Active-Tendon Structural Control with Time Delay, 207
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130

Time series analysis
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141
Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211

Tires
The Bicycle Wheel as Prestressed Structure, 174
Rubber-Tire Particles as Concrete Aggregate, 729
Scrap Tires: Management and Economics, 372

Toll roads
Privatization Takes Its Toll, 1197

Topographic maps
Geometric Design Projects for Highways: An Introduction, 1358

Topography
Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Geometric Design Projects for Highways: An Introduction, 1358

Topsoil
Furrow Irrigation Erosion Lowers Soil Productivity, 651

Torsion
False Paradox of Torsional Buckling, 1013
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968
Rigidities of Horizontally Curved, Flat Structures, 948
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977

Torsional coupling
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813

Toughness
Concrete Toughness After 20 Years, 885

Towers
Airport Towers: A New Generation, 1296

Toxic wastes
Reduction of Deep Percolation and Drain Water, 622

Toxicity
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354
Whose Risk Is It, Anyway?, 1285

Trace elements
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618
Development of Regression Models with Below-Detection Data, 310

Geochemical Factors Affecting Trace Element Mobility, 645
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625
Prognosis on Managing Trace Elements, 623
Reduction of Deep Percolation and Drain Water, 622
Treatment, Reuse, and Disposal of Drain Waters, 616

Traffic accident analysis
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Traffic accidents
Accidents on Interstate Highways Caused by Blowing Dust, 743

Traffic analysis
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Traffic capacity
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063
Assessing Potential for Superhub Airport for California, 1071

Traffic congestion
Application of Filtering Techniques for Incident Detection, 1028
Automating Urban Freeways: Financial Analysis for User Groups, 1064
Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075
Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Traffic control
Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075
Duration and Frequency of Seasonal Traffic Counts, 1051
Infrastructure: Planning and Management, 1365
IVHS: The Invisible Revolution, 1221
Knowledge-Based System for Design of Signalized Intersections, 2
Optimal Control of Freeway Corridor, 1061
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045
Transportation Engineering Basics, 1388

Traffic delay
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081
Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029

Traffic engineering
Microcomputers in Transportation, 1372

Traffic flow
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063
Effect of Vehicle Length on Passing Operations, 1046
Evaluating the Capacity of Freeway Weaving Sections, 1052
IVHS: The Invisible Revolution, 1221
Optimal Control of Freeway Corridor, 1061
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Traffic flow pattern
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060
Evaluating the Capacity of Freeway Weaving Sections, 1052

Traffic management
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063
Application of Filtering Techniques for Incident Detection, 1028
Application of GPS Positioning to Management of Mobile Operation, 1019
Hassle-Free Bridge Rehab, 1270
Knowledge-Based System for Design of Signalized Intersections, 2
Microcomputers in Transportation, 1372
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062
Transportation Hazard Analysis in Integrated GIS Environment, 1044

Traffic planning
Duration and Frequency of Seasonal Traffic Counts, 1051
Visibility Near Intersection Partially Obscured by Vegetation, 1066

Traffic safety
Visibility Near Intersection Partially Obscured by Vegetation, 1066

Traffic signals
Knowledge-Based System for Design of Signalized Intersections, 2
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045

Traffic speed
Transportation Engineering Basics, 1388

Traffic surveillance
Application of Filtering Techniques for Incident Detection, 1028

Traffic volume
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814
Duration and Frequency of Seasonal Traffic Counts, 1051
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060
Evaluating the Capacity of Freeway Weaving Sections, 1052

Training

Implementing TQM in Consulting Engineering Firm, 685

Meeting Professional Development Needs in Large Consulting Firm, 795

Professional Ethics Training for Engineering Firms, 775

Total Quality Management at Construction Jobsites, 688

Transducers

Development of Interferometer for Acoustic Emission Testing, 285

Transformations

Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176

Uniaxial Bending of Columns, 873

Transient flow

Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581

Second-Order Radiation Condition for Surface Wave–Body Interaction, 216

Transient response

Analysis of Delayed Failure in Sloping Excavations, 455

Transient Lamb's Solution for Surface Strip Impulses, 290

Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Transition points

Alluvial Resistance in Transition Regime, 534

Comprehensive Open-Channel Expansion Transition Design, 580

Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593

Transmission lines

New Excitation System for Indoor Testing of Overhead Conductors, 145

Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

System Reliability Concepts in Design of Transmission Lines, 823

Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291

Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Transmission towers

Joint Effects on Behavior of Transmission Towers, 845

Ultimate Load Capacity of Single Steel Angles, 821

Transport phenomena

Comparison of Physical Transport Processes in Noncohesive River Sediments, 303

Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541

Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332

Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Transportation

Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043

Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146

Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041

Haul-Unit Performance, 121

Hazmat Transport Risks: Societal and Individual Perspectives, 1039

Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375

Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042

Transportation Hazard Analysis in Integrated GIS Environment, 1044

Transportation engineering

Computer-Use Factors in Transportation Engineering Project Management, 76

Microcomputers in Transportation, 1372

Transportation Engineering Basics, 1388

Transportation management

Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075

GPS—Rapid Solutions for Transportation Management, 1016

Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375

Transportation planning

IVHS: The Invisible Revolution, 1221

Microcomputers in Transportation, 1372

Predicting Pollution, 1228

Tying Up The Artery, 1295

Transportation safety

High Level Radioactive Waste Management, 1361

Transportation studies

Transportation Engineering Basics, 1388

Transportation system costs

Automating Urban Freeways: Financial Analysis for User Groups, 1064

Transportation systems

DART'S ASAP EIS, 1264

Lost & Found: Comeback at the IDB, 1316

Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374

Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

Trashracks

Hydraulic Design of Reversible Flow Trashracks, 1363

Travel costs

Automating Urban Freeways: Financial Analysis for User Groups, 1064

Travel demand

Analyses of Canadian Air Travel Demands, 1048

Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075

Travel patterns

Analyses of Canadian Air Travel Demands, 1048

Travel time
Transportation Engineering Basics, 1388

Traverse analysis
Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024

Trees
Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351
Saline Drain Water Reuse in Agroforestry Systems, 591

Trenches
Performance of Utility-Trench Shoring: Case Study, 734

Trends
Private Financing for Infrastructure, 1312
Trends in Construction Contractor Financial Data, 134

Triangulation
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026
Phototriangulation Using CCD Camera in Close-Range Environment, 1017

Triaxial tests
Instability of Granular Soils Under Strain Path Testing, 429
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401
Prediction of Plastic Localization Using MRS-Lade Model, 413
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389
Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035
Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480
Stability of Granular Materials in Postpeak Softening Regime, 155
Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219
Triaxial Testing of Naturally Cemented Carbonate Soil, 456
Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432
Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819

Trickle irrigation
Analysis and Design of Trickle-Irrigation Laterals, 639
Soil-Water Distribution under Trickle Source, 615

Trickling filters
Oxygen Transfer in Trickling Filters, 364

Trip distribution models
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080

Tropical soils
Tropical Clays. I: Index Properties and Microstructural Aspects, 426
Tropical Clays. II: Engineering Behavior, 427

Truck specifications
Effect of Vehicle Length on Passing Operations, 1046

Trucks
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875
Effect of Truck Loads on Bridges, 1082
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Trusses
Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752
Effect of Member Snap on Space Truss Collapse, 199
Experimental Study of Timber Trusses and Joints, 878
Fast-Track Stadium, 1204
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909
Integrated Genetic Algorithm for Optimization of Space Structures, 36
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861
Statistical Sensitivity Analysis of Lattice Space Structures, 31

Tsunamis
Numerical Simulations of Large Water Waves due to Landslides, 573

Tube joints
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842

Tubes
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941
Doubly Symmetric Tube Structures. I: Static Analysis, 919
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122
Moment-Curvature Relationships for Dented Tubular Sections, 852
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172

Tuned liquid dampers
Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003

Tunnel construction
Bored Tunneling for Singapore Metro, 7
EPB Shield Tunneling in Mixed Face Conditions, 472
Haunted by the Past, 1277
London Linkage, 1258
New Way Out, 1191

Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024
Two-Time Winner, 1300

Tunneling

Bored Tunneling for Singapore Metro, 7
Shotcrete for Underground Support VI, 1382

Tunnels

Colorado Dome, 1246
New Way Out, 1191

Turbidity

Hydraulic Jumps in Sediment-Driven Bottom Currents, 559
Slow Sand Filtration of Secondary Effluent, 338

Turbines

Oxygen Transfer in Bubbly Turbulent Shear Flow, 493
Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19

Turbulence

Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249
Field Measurements of Secondary Currents in Straight Rivers, 526
Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825
Gust Buffeting. II: Dynamic Alongwind Response, 826
Measurements of Turbulence and Suspended Sediment in Tidal River, 533
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
Self-Aerated Flows on Chutes and Spillways, 506
Turbulence in Rivers due to Navigation Traffic, 525
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Turbulent boundary layers

Generalized Inner Region Velocity Distribution Equation, 530

Turbulent diffusion

Lake Water Temperature Simulation Model, 570

Turbulent flow

Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249
Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531
Computation of Wind Pressures on L-Shaped Buildings, 239
Design of a Submarine Oil Pipeline, 1038
Evaluation of von Karman's Constant from Integral Flow Parameters, 565
Flow through Porous Bed of Turbulent Stream, 169
Hydrodynamic Behavior of Compound Rectangular Open Channels, 515
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539
Stochastic Model of Particulate Transport in Porous Medium, 543
Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19

Two-dimensional flow

Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571

Two-dimensional models

Analytical Crack Model for Reinforced-Concrete Structures, 881
Dynamic Pressure of Water and Sediment on Rigid Dam, 232
Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221
Transient Infiltration from Cavities. II: Analysis and Application, 613
Two-Dimensional Water Flood and Mudflow Simulation, 507

Ultimate loads

Effect of Member Snap on Space Truss Collapse, 199
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379
Ultimate Load Capacity of Single Steel Angles, 821
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Ultimate strength

Eccentric Connection Design: Geometric Approach, 839
Effective Width of Locally Buckled Plates in Compression and Bending, 882
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871
Thermomechanical Properties of Epoxy Mortars, 709

Ultrasonic testing

Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346
Field Evaluation of Preformed Membranes, 1047

Ultraviolet radiation

Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Uncertainty analysis

Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324
A New Point Estimate Method for Water Resources Modeling, 572
Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38
Reliability and Uncertainty Analyses in Hydraulic Design, 1379
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Uncertainty principles

Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030
Lunar-Base Construction Equipment and Methods Evaluation, 30

Underground construction

Analysis of Deep Excavation in Boston, 378

Building the SSC: A Texas-Sized Challenge, 1263
Hong Kong's Wastewater Underground, 1281
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114
Shotcrete for Underground Support V, 1381
Taming the Urban Underground, 1206
Utilization of Industrial By-Products for Construction Materials, 1391

Underground mines
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481

Underground structures
Hong Kong's Wastewater Underground, 1281
Vertical Earth Loads on Buried Engineered Works, 403

Underwater construction
Technology in Marine Construction Firms, 90

Underwater structures
Analysis of Wave Scattering by Submerged Circular Disk, 256
Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Uniform flow
Design of Sewers Based on Minimum Velocity, 336

Uniformity
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184
Unified Design of Horizontal Circular Curves, 1033

United States
Can the U.S. Compete?, 1315
Comparison of Construction Safety Codes in United States and Honduras, 115

Unsaturated flow
Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581
Soil-Water Distribution under Trickle Source, 615
Unsaturated Soils, 1390

Unsteady flow
Cal Poly Model Canal, 631
Description and Evaluation of Program CANAL, 635
Description and Evaluation of Program: CARIMA, 634
Description and Evaluation of Program: DUFLOW, 636
Description and Evaluation of Program MODIS, 637
Description and Evaluation of Program USM, 633
Field Data for Verifying Canal Unsteady Flow Models, 632
Informed Use and Potential Pitfalls of Canal Models, 630
Irrigation–Canal—Simulation Model Usage, 627
Numerical Methods Used to Model Unsteady Canal Flow, 628
Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554
Unique Problems in Modeling Irrigation Canals, 629
Unsteady-Flow Modeling of Irrigation Canals, 626
Verification of Theory of Roll-Wave Formation, 537

Uplift
Estimation of Uplift Capacity of Helical Anchors in Clays, 394
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459
Tensile and Compressive Shaft Capacity of Piles in Sand, 489

Uplift pressure
Force-Displacement Behavior of Flexible Plate Anchors, 409

Uplift resistance
Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486

Urban areas
Geographic Information Systems in Urban Stormwater Management, 1113
Predicting Pollution, 1228
Taming the Urban Underground, 1206
Two-Dimensional Water Flood and Mudflow Simulation, 507
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080

Urban development
Buffer Zones Around Water-Supply Reservoirs, 1132
Techniques for Coordinating and Managing Growth, 1093

Urban highways
Automating Urban Freeways: Financial Analysis for User Groups, 1064

Urban planning
Commercial Growth Management Techniques in San Francisco, 1097
Growth Management in the City of San Diego: Planning the Future Now, 1095
Hawaii: Growth, Government, and Economy, 1094
Housing Linkage Fees: Lessons for Los Angeles, 1096
Incorporating Dam Break Concerns in School Site Selection, 1092

Urban roads
...dge Size and Clearance Time of Single-Point Urban Interchange, 1032

Urban runoff
Design and Construction of Urban Stormwater Management Systems, 1348
Water Management in the '90s: A Time for Innovation, 1392

U.S. Army Corps of Engineers
Partnering-Project Performance in U.S. Army Corps of Engineers, 691

U.S. Geological Survey
Managing the Data Explosion, 1237

Use rates
Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

Utilities
Determination of Most Representative Residential Subdivision, 138
Performance of Utility-Trench Shoring: Case Study, 734
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114
Taming the Urban Underground, 1206

Vadose zone
Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350

Validation
Data Validation Practices and Risk Assessment, 1214
Interactive Computer Graphics for Expert-System Verification, 1134
Moving Load Response of Layered Soil. II: Verification and Application, 271

Value engineering
Cost Model for Low-Pressure Membrane Filtration, 347
A Dome To Remember, 1292
Use Value Engineering Concepts for Spaceport Launching, 24

Valves
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503

Variability
Viscoelastic Heterogeneous Structures with Variable Structural System, 162

Variance analysis
Cost, Schedule, and Time Variances and Integration, 96
Systematic Automated Management Exception Reporting, 86

Vegetation
Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351
Surficial Slope Failure: A Case Study, 755
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360
Visibility Near Intersection Partially Obscured by Vegetation, 1066
Wave Attenuation by Vegetation, 1149

Vehicle impact forces
Impact Studies of Multigirder Concrete Bridges, 942
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916
Vehicle Impact Simulation, 1067

Vehicles
Effect of Vehicle Length on Passing Operations, 1046

Velocity
Design of Sewers Based on Minimum Velocity, 336
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438
Field Measurements of Secondary Currents in Straight Rivers, 526
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267
Stability of Motions of Translational Landslides, 399

Velocity distribution
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535
Critical Depth, Velocity Profiles, and Averaging, 610
Generalized Inner Region Velocity Distribution Equation, 530

Velocity profile
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499

Ventilation
New Way Out, 1191

Vertical cylinders
Interaction of Waves with *N* Vertical Circular Cylinders, 1188
Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170
Scattering of Water Waves by Vertical Cylinders, 1165

Vertical drains
Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433

Vertical loads
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Vertical Earth Loads on Buried Engineered Works, 403

Vibration
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Efficiency of Vibrational Energy Dissipation by Moving Shot, 955
Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210
Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194
Impedance Functions of Piles in Inhomogeneous Media, 458
Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
Keeping Cables Calm, 1283
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706
New Excitation System for Indoor Testing of Overhead Conductors, 145
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
Parametrically Induced Vibration in Concrete Columns, 218
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136
Transverse Vibration of Thick Annular Sector Plates, 242

Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Vibration analysis
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74

Vibration control
Analytical Model of Viscoelastic Fluid Dampers, 993
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949
Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003

Vibration damping
Efficiency of Vibrational Energy Dissipation by Moving Shot, 955
Keeping Cables Calm, 1283

Vibration measurement
Modal Identification of Cable-Stayed Pedestrian Bridge, 997

Videotape
CRANIUM: Device for Improving Crane Productivity and Safety, 82

Vietnam
Vietnam: Worth Looking Into, 1319

Viscoelasticity
Analytical Model of Viscoelastic Fluid Dampers, 993
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Models of Viscoelasticity with Complex-Order Derivatives, 234
Time-Dependent Response of Three-Filament Cord, 197
Viscoelastic Heterogeneous Structures with Variable Structural System, 162
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Viscoplasticity
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430

Viscosity
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Generalized Inner Region Velocity Distribution Equation, 530
Mechanisms for Overdosing in Sludge Conditioning, 307
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Viscous flow
Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191

Visibility
Visibility Near Intersection Partially Obscured by Vegetation, 1066

Visual aids
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Imaging the Future, 1306

Visual perception
Imaging the Future, 1306

Void ratio
One-Dimensional High-Pressure Compression of Granular Media, 374
Permeability Behavior of a Water Treatment Sludge, 474
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Volatile organic chemicals
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340
MSA for VOC Removal, 1216
Water Pipelines: Tackling Toxics, 1238

Volatilization
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Volume change
Determination of Load Sharing in Insulating Glass Units, 170
Simulating Seasonal Ground Movement in Unsaturated Clay, 446

Volume measure
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Vortex shedding
Effect of Sidewalk Vents on Bridge Response to Wind, 832
Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Vortices
Stability of Riprap at Bridge Piers, 558
Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Walls
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179
Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828
Mass Transport in Wave Tank, 1152
Shear Behavior of RC Structural Walls, 847
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Warpage
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733
Simple Method to Stabilize I-Beams Against Lateral Buckling, 966
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Washington
What Sank the Lacey Murrow?, 1293

Waste disposal
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340
High-Tech Landfill Caps, 1235
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552
Lead is a Four-Letter Word, 1257
Treatment, Reuse, and Disposal of Drain Waters, 616

Waste management
Fly Ash for Soil Improvement, 1356
High Level Radioactive Waste Management, 1361
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Waste processing facilities
Sludge Under Pressure, 1198

Waste recycling
Investigation of Phosphate Mining Waste for Construction Materials, 714
Recycled Roads, 1222
Treatment, Reuse, and Disposal of Drain Waters, 616

Waste site cleanup
A Natural Cleanup, 1213
Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350
Sampling Sediment on a Complex Site, 1212
STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311
Superfund: New Leadership, Old Problems, 1210
Whose Risk Is It, Anyway?, 1285

Waste storage
High Level Radioactive Waste Management, 1361

Waste treatment
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318
Solid-Waste Management: Cooperative Extension Initiative, 800

Waste utilization
Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371
Engineering Sustainable Development, 1279
Exchanging Wastes, 1287
Recycled Roads, 1222
Rubber-Tire Particles as Concrete Aggregate, 729
Scrap Tires: Management and Economics, 372
Utilization of Industrial By-Products for Construction Materials, 1391

Wastewater
Biological Treatment of Wastewater from Nitrosophenol Production, 353
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Pressure Pipeline Design for Water and Wastewater, 1378

Wastewater management
Prognosis on Managing Trace Elements, 623
Recycling Drainage Water in San Joaquin Valley, California, 599

Wastewater treatment
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327
Batch Biological Treatment of Inhibitory Substrates, 352
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357
Computer-Based Environment for Wastewater Treatment Plant Design, 356
Effects of Wastewater Composition on Stability of UASB, 358
Exchanging Wastes, 1287
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337
Hong Kong's Wastewater Underground, 1281
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304
Oxygen Transfer in Trickling Filters, 364
Prediction of Rotating Biological Contactor Efficiency Using TOC, 328
Pulsation Errors in Compressible Flow Measurement, 323
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6
Slow Sand Filtration of Secondary Effluent, 338

Water content
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Creep Behavior of Saline Fine-Grained Frozen Soil, 48

Water demand
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124
Regional Irrigation Water Demand, 644
Water Management in Arranged-Demand Canal, 598

Water depth
Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185
Border Advance Using Improved Volume-Balance Model, 654
Measuring Water in Trapezoidal Canals, 592

Water distribution
Capillary-Tube Infiltration Model, 617
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136
Control Method for On-Demand Operation of Open Channel Flow, 596

Egypt's Real Time Water Management, 1304
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Microsystems Irrigation in Niger, West Africa, 647
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319
Modeling Pipe Networks Dominated by Junctions, 550
Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Pipeline Damage Due to Wave Propagation, 463
Predicting Pipe Failure Effects in Water Distribution Networks, 1102
Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605
Water-Distribution GIS from Fragmented and Incomplete Information, 71

Water flow

Application of GIS Network Routines for Water Flow and Transport, 1114
Capillary-Tube Infiltration Model, 617
Computer Modeling of Side-Flow Weirs, 653
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725
Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346
Meandering Water Rivulet, 567
Numerical Modeling of Flood Propagation through System of Reservoirs, 514
Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560
Transient Infiltration from Cavities. I: Theory, 612

Water infiltration

Stabilization of Jointing Sand in Block Paving, 1036

Water levels

Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Convolution Method for Time-Dependent Beach-Profile Response, 1159
Triple Plate Balanced Resistance Water-Level Gauge, 517

Water management

Agronomic and Environmental Benefits of Water-Table Management, 658
Application of SHE for Irrigation-Command-Area Studies in India, 582
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652
Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638
Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107
New Paradigm for Coordination in Water Industry, 1138
Reclaiming Clear-Cut Land, 1298
Reduction of Deep Percolation and Drain Water, 622
Water Management in Arranged-Demand Canal, 598
Water Management in the '90s: A Time for Innovation, 1392

Water pipelines

Drilling with Direction, 1271
Predicting Water-Main Breakage Rates, 1127

Water pollution

Cr(III) in Activated Sludge, 306
Kesterson Crisis, 614
Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109
Probabilistic Screening of Ground-Water Contaminants, 315
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11
Water Pipelines: Tackling Toxics, 1238

Water pollution sources

Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618

Water quality

Agronomic and Environmental Benefits of Water-Table Management, 658
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119
Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618
Conditional-Yield Operating Rules for Low-Flow Management, 1120
Design and Construction of Urban Stormwater Management Systems, 1348
Discrete Volume-Element Method for Network Water-Quality Models, 1133
Drainage Water Disposal, Jeddah, Saudi Arabia, 1146
Fit to Drink, 1232
GIS and Storm-Water Management, 1278
Kesterson Crisis, 614
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512
Lake Water Temperature Simulation Model, 570
Local Water, Local Control, 1253
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369
Managing the Data Explosion, 1237
Measurement of Oxygen Transfer in Clean Water, 1371
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319
OCEA Goes Green, 1252
Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144
Prognosis on Managing Trace Elements, 623
Reclaiming Clear-Cut Land, 1298
Reservoir Destratification via Mechanical Mixers, 519
Round Buoyant Jet Entering Shallow Water in Motion, 575
Saline Drain Water Reuse in Agroforestry Systems, 591

Three-Dimensional Eutrophication Model of Chesapeake Bay, 361
Towards a Modeling Support System for Simulation of Water Quality, 70
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11
Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360
Water Pipelines: Tackling Toxics, 1238
Water-Quality Modeling with EPA Reach File System, 1116
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Water quality control
Buffer Zones Around Water-Supply Reservoirs, 1132
Subsurface Drainage System Design and Drain Water Quality, 619

Water quality standards
Fit to Drink, 1232

Water resources
Application of GIS Network Routines for Water Flow and Transport, 1114
Expert Geographic Information System for Texas Water Planning, 1111
Implementation of GIS for Water Resources Planning and Management, 1112
Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126
A New Point Estimate Method for Water Resources Modeling, 572
New Wells Safeguard Scenic Tahoe, 1234
Revised Surface-Water Supply Index for Western United States, 1128
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123
Water-Quality Modeling with EPA Reach File System, 1116

Water resources development
Expert Geographic Information System for Texas Water Planning, 1111
Toward Spatial Decision Support Systems in Water Resources, 1110

Water resources management
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119
Control Method for On-Demand Operation of Open Channel Flow, 596
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Egypt's Real Time Water Management, 1304
Evaluating Artificial Recharge Needs of Aquifer, 1137
Implementation of GIS for Water Resources Planning and Management, 1112
New Paradigm for Coordination in Water Industry, 1138
Recycling Drainage Water in San Joaquin Valley, California, 599
Responsible Management of Tourist Island, 782
Toward Spatial Decision Support Systems in Water Resources, 1110
Water Management in the '90s: A Time for Innovation, 1392

Water reuse
Drainage Water Disposal, Jeddah, Saudi Arabia, 1146
Recycling Drainage Water in San Joaquin Valley, California, 599
Saline Drain Water Reuse in Agroforestry Systems, 591
Treatment, Reuse, and Disposal of Drain Waters, 616

Water sampling
Water Pipelines: Tackling Toxics, 1238

Water supply
Alfalfa Irrigation During Drought, 661
Buffer Zones Around Water-Supply Reservoirs, 1132
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Land Use, Climate and Water Supply, 1145
Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126
New Wells Safeguard Scenic Tahoe, 1234
Optimal Operation of Multiple-Reservoir System, 1101
Revised Surface-Water Supply Index for Western United States, 1128
Water Management in Arranged-Demand Canal, 598
Water Management in the '90s: A Time for Innovation, 1392

Water supply systems
Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124
Reduction of Deep Percolation and Drain Water, 622

Water surface
Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

Water surface profiles
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593
Nonunique Water-Surface Profiles in Open Channels, 579

Water table
Agronomic and Environmental Benefits of Water-Table Management, 658
Estimation and Optimization of Transient Seepage with Free Surface, 655
Water-Table Correction Factors to Applied Gasoline Contamination, 334

Water temperature
Real-Time Optimal Stochastic Control of Power Plant River Heating, 135

Water transfer
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369

Water transportation
Turbulence in Rivers due to Navigation Traffic, 525

Water treatment
Cost Model for Low-Pressure Membrane Filtration, 347
Fit to Drink, 1232
Glyphosate Removal from Drinking Water, 368
Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309
Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342
Permeability Behavior of a Water Treatment Sludge, 474
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343
Treatment, Reuse, and Disposal of Drain Waters, 616
Water Pipelines: Tackling Toxics, 1238

Water treatment plants
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327
Computer-Based Environment for Wastewater Treatment Plant Design, 356
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369
Hong Kong's Wastewater Underground, 1281

Water use
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124
Regional Irrigation Water Demand, 644

Water waves
Analysis of Wave Scattering by Submerged Circular Disk, 256
Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176
Dependence of Coefficient *K* on Grain Size, 1180
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
Dynamic Response of Poroelastic Bed to Water Waves, 553
Irregular Wave-Induced Velocities in Shallow Water, 1172
Scattering of Water Waves by Vertical Cylinders, 1165
Verification of Theory of Roll-Wave Formation, 537
Water Waves on Crown Breakwaters, 1168
Water Waves on Flexible and Porous Breakwaters, 208

Waterfront facilities
London Linkage, 1258

Watershed management
Buffer Zones Around Water-Supply Reservoirs, 1132
Water Management in the '90s: A Time for Innovation, 1392

Watersheds
Asymptotic Determination of Runoff Curve Numbers from Data, 604
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119
Criteria for Evaluation of Watershed Models, 611
Grouped Response Units for Distributed Hydrologic Modeling, 1118
Land Use, Climate and Water Supply, 1145
Radar-Assisted Real-Time Flood Forecasting, 1103
Review of GIS Applications in Hydrologic Modeling, 1115

Wave action
Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171
Transport of Fine Sands by Currents and Waves, 1154

Wave attenuation
Wave Attenuation by Vegetation, 1149

Wave damping
Interaction of Waves with *N* Vertical Circular Cylinders, 1188

Wave diffraction
Analysis of Wave Scattering by Submerged Circular Disk, 256
Diffraction of Solitary Waves by Breakwaters, 1150
Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184
Wave Diffraction Through Submerged Breakwaters, 1183

Wave energy
Longshore Transmission of Reflected Waves, 1181

Wave equations
Simplified Dynamic Method for Pile-Driving Control, 416
Wave Equation Parameters from Driven-Rod Test, 440

Wave forces
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179
Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170
Water Waves on Flexible and Porous Breakwaters, 208

Wave generation
Study on Porous Wave Makers, 243

Wave groups
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155

Wave height
Convolution Method for Time-Dependent Beach-Profile Response, 1159
Joint Distribution of Large Wave Heights and Associated Periods, 1162
Pressure and Set Down for Higher-Order Stokes Waves on Current, 1175
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157
Transport of Fine Sands by Currents and Waves, 1154

Wave pressure
Pressure and Set Down for Higher-Order Stokes Waves on Current, 1175

Wave propagation
Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185
Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176

Diffraction of Solitary Waves by Breakwaters, 1150
Dynamic Response of Poroelastic Bed to Water Waves, 553
Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407
Pipeline Damage Due to Wave Propagation, 463
Second-Order Wave Loads on Planar Wavemakers, 1177
Stress-History–Based Model for G^e of Cohesionless Soils, 443
Verification of Theory of Roll-Wave Formation, 537
Wave Propagation in Ice-Covered Channels, 546

Wave reflection
Irregular Wave Reflection and Runup on Permeable Slopes, 1178
Longshore Transmission of Reflected Waves, 1181
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184
Wave Diffraction Through Submerged Breakwaters, 1183

Wave refraction
Longshore Transmission of Reflected Waves, 1181

Wave runup
Irregular Wave Reflection and Runup on Permeable Slopes, 1178
Numerical Simulations of Large Water Waves due to Landslides, 573

Wave spectra
Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151
Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176
Joint Distribution of Large Wave Heights and Associated Periods, 1162
Non-Gaussian Properties of Second-Order Random Waves, 168
Third-Generation Wind-Wave Model for Use on Personal Computers, 1147

Wave tanks
Mass Transport in Wave Tank, 1152

Wave velocity
Automated Surface Wave Method: Field Testing, 444
Automated Surface Wave Method: Inversion Technique, 445
Irregular Wave-Induced Velocities in Shallow Water, 1172
Wave Diffraction Through Submerged Breakwaters, 1183

Wavelength
Meandering Water Rivulet, 567

Waves
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155
Interaction of Waves with *N* Vertical Circular Cylinders, 1188
Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157
Second-Order Wave Loads on Planar Wavemakers, 1177
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548
Stream Function Wave Theory with Profile Constraints, 1153
Transport of Fine Sands by Currents and Waves, 1154
Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Weather
Report on Ship Channel Design, 1380

Weight
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902

Weighting functions
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502
Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262

Weirs
Characteristics of Circular-Crested Weir, 557
Computer Modeling of Side-Flow Weirs, 653

Welded joints
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978
Study on Residual Stress Relief of Welded Structural Steel Joints, 715

Welding
Behavior of Arc Spot Weld Connections in Tension, 930
Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006

Well construction
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Wells
Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67
New Wells Safeguard Scenic Tahoe, 1234
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Wetlands
Hydraulic Engineering '93, 1364
Kesterson Crisis, 614
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369

Reclaiming Clear-Cut Land, 1298

Wetting front

Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600

Soil-Water Distribution under Trickle Source, 615

Wharves

MASSPORT Modernization, 1223

Wheels

The Bicycle Wheel as Prestressed Structure, 174

Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

White noise

Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211

Wildlife conservation

Responsible Management of Tourist Island, 782

Wind

Accidents on Interstate Highways Caused by Blowing Dust, 743

Bridge Buffeting by Skew Winds in Erection Stages, 163

Dynamic Along-Wind Response of Buildings: Comparative Study, 891

Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19

Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157

Wind forces

Computation of Wind Pressures on L-Shaped Buildings, 239

Effect of Sidewalk Vents on Bridge Response to Wind, 832

Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825

New Excitation System for Indoor Testing of Overhead Conductors, 145

Problematics in Formulation of Wind-Force Models for Bridge Decks, 229

Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Wind loads

Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

X-Bracing Anchorage Connection, 996

Wind pressure

Computation of Wind Pressures on L-Shaped Buildings, 239

Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825

Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279

Wind tunnel test

Effect of Sidewalk Vents on Bridge Response to Wind, 832

Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824

Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Wind tunnels

Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824

Wind velocity

Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825

Gust Buffeting. II: Dynamic Alongwind Response, 826

Wind waves

Joint Distribution of Large Wave Heights and Associated Periods, 1162

Longshore Sand Transport Southeast of Bahia de Todos Santos, B.C. Mexico, 1182

Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157

Third-Generation Wind-Wave Model for Use on Personal Computers, 1147

Window glass

Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856

Structural Behavior of Architectural Laminated Glass, 817

Wisconsin

Scrap Tires: Management and Economics, 372

Women

Engineering Women: A View From the Workplace, 663

Wood

Bolted Connection Design Values Based on European Yield Model, 929

Reliability-Based Design of Wood Members Subject to Ponding, 994

Wood beams

Serviceability Design in LRFD for Wood, 1012

Wood poles

Three-Dimensional Model for Wood-Pole–Strength Predictions, 931

Wooden piles

MASSPORT Modernization, 1223

Pin Piles Save Silos, 1276

Wooden structures

Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752

Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894

LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976

Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712

Reliability of Wood Structural Systems, 954

Twenty-First Century Timber Engineering, 1389

Working conditions

Methods of Motivating for Increased Productivity, 672

Moving an Engineering Firm: A Checklist, 673

World trade

Dutch Globetrotting Pays Off, 1321

World Bank Update, 1318

Writing
Developing Competent Civil Engineering Writers, 765
Dynamic Communication for Engineers, 1353
Yield
Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295
Triaxial Testing of Naturally Cemented Carbonate Soil, 456
Yield stress
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498
Yield surface
Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223

Author Index

Abbott, Jim
see Culp, Gordon, 685

Abdalla, Saleh
Third-Generation Wind-Wave Model for Use on Personal Computers, 1147
see Ergin, Ayşen, 1179

Abdel-Akher, Ahmed
see Hartley, Gilbert, 831

Abdel-Ghaffar, M. E. M.
see Mesri, G., 450

Abdel-Karim, Ahmad M.
Structural Response of Full-Scale Concrete Box Culvert, 989

Abdul-Massih, Y.
see Van Dyer, D. B., 900

Abdulrazzak, M. J.
see Sorman, A. U., 1104

Åberg, B.
Washout of Grains from Filtered Sand and Gravel Materials, 376

Abkowitz, Mark
see Lepofsky, Mark, 1044

AbouRizk, Simaan M.
Application of Computer Simulation in Resolving Construction Disputes, 102
see Gonzalez-Quevedo, Antonio A., 116

Abramento, Mauricio
Shear-Lag Analysis of Planar Soil Reinforcement in Plane-Strain Compression, 164

Abrams, Daniel P.
Masonry Carries the Load, 1208

Abt, S.
see Genovez, A., 660

Abt, Steven R.
see Adam, Ahmed M., 549
see Johns, Derek D., 544

Abudayyeh, Osama Y.
Prototype Integrated Cost and Schedule Control System, 61

Abu-Hijleh, Samer F.
Systematic Automated Management Exception Reporting, 86

Abul-Azm, A. G.
Wave Diffraction Through Submerged Breakwaters, 1183

Abu-Lebdeh, Taher M.
Plasticity-Damage Model for Concrete Under Cyclic Multiaxial Loading, 235
see Voyiadjis, George Z., 260

Abu-Rizaiza, Omar S.
Drainage Water Disposal, Jeddah, Saudi Arabia, 1146

Abu-Sharekh, Majed Subhi
see Vittal, Nandana, 509

Acar, Yalcin B.
see Puppala, Anand J., 491

Ackers, P.
Discussion of: Analysis of Spiral Vortex and Vertical Slot Vortex Drop Shafts, 5

Adali, Sarp
Optimal Hybridization of Symmetric, Cross-Ply Laminates Against Buckling, 41

Adam, Ahmed M.
Characteristics of B-Jump with Different Toe Locations, 549

Adams, Teresa M.
Knowledge Representation and Processing in Relational Data Base, 64
Spatial Data Models for Managing Subsurface Data, 65

Adeghe, L. N.
see Danay, A., 812

Adeli, H.
see Yu, G., 962

Adeli, Hojjat
High-Performance Computing in Structural Mechanics and Engineering, 32
Integrated Genetic Algorithm for Optimization of Space Structures, 36

Adin, Moshe A.
see Farhey, Daniel N., 915

Adkins, Dan F.
Mathematics of Concrete Scaling, 716

Agassi, Nissim
Machine-Friendly Facility, 1202

Agbayani, N.
Novel Design Algorithms for *K* Factor Calculation and Beam-Column Selection, 1011

Aglan, H. A.
Damage-Evolution Approach to Fatigue Cracking in Pavements, 222

Ahmad, Irtishad
see Navarrete, George, 1254

Ahmad, Saleem
Mathematical Modeling of Saturated-Unsaturated Flow to Drains, 581

Ahmadi, B. H.
Behavior of Composite Timber-Concrete Floors, 982

Ahmadi, Goodarz
see Chowdhury, Showkat J., 249

Ahmed, Nesar U.
Higher Order Modeling of Plates by *p*-Version of Finite Element Method, 221

Airey, D. W.
Triaxial Testing of Naturally Cemented Carbonate Soil, 456

Aitcin, Pierre-Claude
see Do, Minh-Tan, 703

Aitken, Michael D.
Batch Biological Treatment of Inhibitory Substrates, 352
Biological Treatment of Wastewater from Nitrosophenol Production, 353

Aizawa, S.
see Reinhorn, A. M., 917

Akhtaruzzaman, Ali A.
see Hasnat, Abul, 968

Aktan, A. Emin
see Huria, Vikas, 811

Alam, S. M. Shahid
Robust Active Optimal Control Scheme Including Soil-Structure Interaction, 949

Al-Amoud, Ahmed I.
see Hathoot, Helmi M., 639

Al-Arjani, A. H.
see Munns, A. K., 750

Al-Bermani, F. G. A.
see Kitipornchai, S., 849

Al-Bermani, Faris G. A.
see Chin, Chee-Kiong, 864

Albertson, Maurice L.
see Shafai-Bajestan, Mahmood, 504

Albrecht, P.
see Austin, M. A., 54

Albrecht, Pedro
see Tiedeman, Jane L., 875

Alcocer, Sergio M.
RC Frame Connections Rehabilitated by Jacketing, 886

Alexander, John A.
Digger's Decline: A Fable for Civil Engineers, 792

Alexander, Mark G.
Dissolution of No-Fines Concrete Slab Due to Soft-Water Attack, 725

Al-Gahtani, A. S.
see Al-Saadoun, S. S., 721

Ali, Abdalla ElSadig
Population Estimation of City from Aerial Photographs: Riyadh Case, 1100

Ali, Masoud S.
see Swamee, Prabhata K., 656

Alishahi, M. M.
Multiple-Zone Potential Solution around Wing-Body Configurations, 37

Alkass, Sabah
Computer-Aided Equipment Selection for Transporting and Placing Concrete, 108

Alkhairi, F. M.
Analysis of Beams Prestressed with Unbonded Internal or External Tendons, 957

Allen, Douglas A.
DART'S ASAP EIS, 1264

Allen, Richard G., ed.
Management of Irrigation and Drainage Systems: Integrated Perspectives, 1369
see Scaloppi, Edmar J., 586
see Scaloppi, Edmar J., 621

Allipuram, Reddy R.
see Sharma, Satish C., 1051

Al-Muttair, Fouad
see Vittal, Nandana, 509

Al-Negheimish, Abdulaziz I.
see Wheat, Dan L., 728

Al-Qadi, Imad L.
Field Evaluation of Preformed Membranes, 1047

AlQaser, Ghassan
see Adam, Ahmed M., 549

Al-Saadoun, S. S.
Corrosion of Reinforcing Steel in Fly Ash Blended Cement Concrete, 721

Al-Sanad, Hasan A.
Settlement of Circular and Ring Plates in Very Dense Calcareous Sands, 412

Alshaikh, Abdelmohsen A.
see Gates, Timothy K., 605

Altman, Tom
see Rossman, Lewis A., 1133

Altobelli, Frank
Prototype Robotic Masonry System, 17

Al-Turk, Motasem
see Moussavi, Massoum, 146

Aly, Alaa
Rigidities of Horizontally Curved, Flat Structures, 948

Aly, Amin Saleh
Stability of Pitched-Roof Frames in National Building Codes, 980

Al-Yousef, Ali Khamis
see Farooq, Shaukat, 338

Ambrose, Timothy P.
see Fuhr, Peter L., 935

Amde, Amde M.
see Mirmiran, Amir, 960

American Society of Civil Engineers, Publications Division
ASCE Annual Combined Index—1992, 1327

Amirkhanian, Serji N.
see Kim, Kwang W., 727
see Williams, Bill, 731

Amy, Gary L.
see Chowdhury, Zaid K., 309

Anagnostopoulos, Christos
Interaction of Axial and Lateral Pile Responses, 424

Anagnostou, Georgios
Significant Parameters in Elastoplastic Analysis of Underground Openings, 398

Andersen, Carl M.
see Noor, Ahmed K., 194

Andersen, Knut H.
Field Tests of Anchors in Clay. II: Predictions and Interpretation, 466
see Dyvik, Rune, 465

Anderson, G. K.
see Yang, G., 358

Anderson, Loren R., ed.
Geotechnical Practice in Dam Rehabilitation, 1359

Ang, A. H.-S., ed.
Structural Engineering in Natural Hazards Mitigation, 1386

Angelakis, Andreas N.
Soil-Water Distribution under Trickle Source, 615

Ansah, Alexander Michael
Analysis of Arch Dams, 892

Ansari, Farhad, ed.
Applications of Fiber Optic Sensors in Engineering Mechanics, 1326
Kinematics of Crack Formation in Cementitious Composites by Fiber Optics, 209

Anselmo, Peter C.
see Lyons, William C., 799

Apper, Brian
see Kulkarni, Ram B., 1049

Arimes, George N.
see Shaw, Douglas T., 1087

Aronian, Apraham
see Alkass, Sabah, 108

Arseculeratne, R.
see Kyriakides, S., 181

Arulanandan, K.
Centrifuge Study on Volume Changes and Dynamic Stability of Earth Dams, 477
Project Velacs—Control Test Results, 452

Asano, Toshiyuki
see Kobayashi, Nobuhisa, 1149

ASCE Coastal Engineering Technical Committee of the Waterway, Port, Coastal and Ocean Division
Professional Issues in Coastal Engineering, 787

ASCE Task Committee on Boundary Survey Standards, Land Surveying Committee, Surveying Engineering Division
ASCE Proposed Model Standard of Practice for Property Boundary Surveys, 1022

ASCE Task Committee on Definition of Criteria for Evaluation of Watershed Models of the Watershed Management Committee, Irrigation and Drainage Division
Criteria for Evaluation of Watershed Models, 611

ASCE Task Committee on Irrigation Canal System Hydraulic Modeling
Unsteady-Flow Modeling of Irrigation Canals, 626

ASCE Task Committee on Manual of Practice for Steel Penstocks, Energy Division, American Society of Civil Engineers
Steel Penstocks, 1384

Ashley, David B.
see Boles, Walter W., 30

Asik, Mehmet
see Vallabhan, C. V. Girija, 895

Askar, Hasan G.
Stresses in Ground-Freezing Problems with Infinite Boundaries, 151

Astaneh, Abolhassan
Lifelike Model, 1241

Astaneh-Asl, Abolhassan
Behavior and Design of Steel Single Plate Shear Connections, 944

Atanackovic, T. M.
see Djukic, D. S., 213

Athanasopoulos, G. A.
Preconsolidation versus Aging Behavior of Kaolinite Clay, 441

Atkinson, Joseph F.
Detachment of Buoyant Surface Jets Discharged on Slope, 545

Aulenbach, Brent T.
see Hooper, Richard P., 1237

Austin, L. Kevin
see Farid, Foad, 690

Austin, M. A.
XBUILD: Preprocessor for Finite Element Analysis of Steel Bridge Structures, 54

Austin, Teresa
Local Water, Local Control, 1253
Rocky Mountain Hydro, 1231
A Solid Waste Solution, 1251
Superfund: New Leadership, Old Problems, 1210
Traversing the Terminals, 1269

Ave, T.
see Sakumoto, Y., 983

Aw, Y. B.
Phototriangulation Using CCD Camera in Close-Range Environment, 1017

Awosika, Larry F., ed.
Coastlines of Western Africa, 1343

Ayala, Gustavo
see O'Rourke, Michael, 463

Baba, Shunsuke
see Alam, S. M. Shahid, 949

Babcock, Roger W., Jr.
see Hsieh, Chu-Chin, 366

Babu, G. L. Sivakumar
see Pandian, N. S., 426
see Pandian, N. S., 427

Back, Sue A.
Keeping the Books: A Taxing Task, 1307

Backman, Lisa
Computer-Aided Liability, 1239

Baecher, Gregory B.
see DeGroot, Don J., 382

Baetz, Brian W.
Storage Volume Sizing for Landfill Leachate-Recirculation Systems, 322

Bailey, James R.
see Vallabhan, C. V. Girija, 895

Baily, Thomas O.
see Kulkarni, Ram B., 1049

Baker, Carol P.
Wellhead Protection Area Delineation: Linking Flow Model with GIS, 1117

Baker, G.
see Khennane, A., 238

Baker, Graham
Lateral Buckling of Nonprismatic Cantilevers Using Weighted Residuals, 262

Bakht, Baidar
see Mufti, Aftab A., 907

Bakoss, S. L.
see Pan, L. B., 934

Balaguru, P. N.
see Maher, M. H., 711

Balasubramaniam, A. S.
see Loganathan, N., 448

Balasundaram, V.
Data Validation Practices and Risk Assessment, 1214

Bales, Roger C.
see Chowdhury, Zaid K., 309

Ballard, Glenn
see Howell, Gregory, 125

Bandarin, Francesco, ed.
see Sorensen, Jens, ed., 1368

Banerjee, Sunirmal
Design Charts for Double-Walled Cofferdams, 386

Banerji, Shankha K.
see Surampalli, Rao Y., 329

Bank, Lawrence C.
Questioning Composites, 1195

Barbagallo, Joseph C.
High-Tech Landfill Caps, 1235

Barbero, Ever J.
Local Buckling of FRP Beams and Columns, 720

Bardet, J. P.
Liquefaction Sand Boils in San Francisco during 1989 Loma Prieta Earthquake, 406

Barlaz, Morton A.
Framework for Assessment of Recycle Potential Applied to Plastics, 348

Barnes, Wilson C.
Microcomputers in Management of Construction Operations, 105

Baruch, M.
see Frostig, Y., 176

Barzegar, Fariborz
see Channakeshava, Chidambaram, 1078

Basak, Asit K.
see Hashimoto, Philip S., 141

Basak, Bharat C.
see Swamee, Prabhata K., 580

Basole, Madhukar M.
see Vijayraghawan, V., 739

Bassin, J. K.
see Mhaisalkar, V. A., 369

Basu, P. K.
see Sharif, Alfarabi, 984

Basu, Prodyot K.
see Ahmed, Nesar U., 221

Batchelor, Bill
see Taffinder, Glen Gregory, 299

Bates, Gary D.
Trick Plays and Traps, 1249
see Tirella, O. C. "Russ", 1394

Bathon, Leander
Ultimate Load Capacity of Single Steel Angles, 821

Bauer, Karel
see Křístek, Vladimír, 889

Baumgartner, Charles A.
Hassle-Free Bridge Rehab, 1270

Bautista, E.
Identification of Furrow Intake Parameters from Advance Times and Rates, 601
Numerical Calculation of Infiltration in Furrow Irrigation Simulation Models, 600
Optimal Management Strategies for Cutback Furrow Irrigation, 662
Reliability of Optimized Furrow-Infiltration Parameters, 641

Bayly, D. A.
see Teskey, W. F., 1018

Bažant, Zdeněk P.
Scaling Laws in Mechanics of Failure, 258
Stochastic Drying and Creep Effects in Concrete Structures, 822
Why Direct Tension Test Specimens Break Flexing to the Side, 867
see Carol, Ignacio, 282
see Hasegawa, Toshiaki, 722
see Hasegawa, Toshiaki, 723

Baziw, Erick J.
Digital Filtering Techniques for Interpreting Seismic Cone Data, 438

Beam, Thomas G.
see Gay, Alan E., 339

Bear, Jacob
see Corapcioglu, M. Yavuz, 241

Becker, Rachel
Thermal Resistance of Masonry Walls—Analysis and Test Results, 718

Becker, Russell A.
see Dorweiler, Vernon P., 760

Bedair, Osama K.
Plate-Stiffener Assemblies in Uniform Compression. Part I: Buckling, 264
see Sherbourne, Archibald N., 265

Bedient, Philip B.
Getting to the Nonpoint Source with GIS, 1240

Behr, R. A.
Structural Behavior of Architectural Laminated Glass, 817

Beke, G. J.
Aquifer Characteristics and Long-Term Ground-Water Levels, 588
Long-Term Water Quality of Shallow Ground Water at Irrigated Sites, 587

Beliveau, Jean-Guy
see Zhang, Hai-Yan, 261

Beliveau, Yvan
Dynamic Damping of Payload Motion for Cranes, 120

Beliveau, Yvan J.
Multitask Motion Planning for Material Handling in Construction, 92

Bell, John F.
see James, Wesley P., 1103

Benaija, E. H.
see Torrenti, J. M., 289

Benak, Joseph V.
see Abdel-Karim, Ahmad M., 989

Ben-Akiva, Moshe
Infrastructure Management under Uncertainty: Latent Performance Approach, 1030

Bender, Michael J.
Interactive Computer Graphics for Expert-System Verification, 1134

Benekohal, R. F.
see Linkenheld, J. S., 2

Benjamin, Colin O.
see McCrary, Steven W., 1099

Bennett, F. L.
see Hulsey, J. L., 43

Bennett, F. Lawrence
New Course in Management of Cold Regions Construction, 50

Benson, Craig H.
Hydraulic Conductivity of Compacted Clay Frozen and Thawed in Situ, 390
Probability Distributions for Hydraulic Conductivity of Compacted Soil Liners, 402

Benson, S. M.
Kesterson Crisis, 614

Bentley, Walter J.
Changes in Entrance Resistance of Subsurface Drains, 624

Benz, Stephen M.
Runway Rehab: A Case for CADD, 1242

Bergado, D. T.
see Loganathan, N., 448

Beri, Pramod
Cyclonic Damage to Structural Steel Skeleton During Erection, 741

Berliner, S., III.
see Reddi, Lakshmi, 346

Bernard, Erik Stefan
Tests of Profiled Steel Decks with V-Stiffeners, 936

Bernold, Leonhard E.
Analysis of Back Injuries in Construction, 118
Motion and Path Control for Robotic Excavation, 16
Placement-Oriented Design and Delivery of Concrete Reinforcement, 100
Speech-Based Data-Entry Systems for Construction, 73
see Altobelli, Frank, 17
see McCahill, Dennis F., 117

Betts, M.
Different Perceptions of Importance of Educational Objectives, 794

Bhatia, S.
see Parfitt, M. K., 126

Bhave, Pramod R.
see Vijayraghawan, V., 739

Bhimaraddi, A.
Observations on Higher-Order Beam Theory, 42

Bhowmik, Nani G.
see Mazumder, Bijoy S., 525

Bienkiewicz, B.
Effects of Partial Streamlining on Aerodynamic Response of Bridge Decks, 824

Biller, Benjamin J.
Cable-Stayed Convention Center, 1201

Billington, David P.
see Buonopane, Stephen G., 860

Bingham, George
see Greenman, James H., 1276

Bishara, Alfred G.
Load Distribution in Multibeam Precast Pretopped Prestressed Bridges, 858
Wheel Load Distribution on Simply Supported Skew I-Beam Composite Bridges, 827

Biswas, Mrinmay
see Kelsey, R. George, 709

Biswas, Pratim
see Flora, Joseph R. V., 355

Blanc, Frederic C.
see Hoisve, Rae A., 301

Bobiak, Sofia M. Kaczor
see Baker, Carol P., 1117

Boffi, Giacomo
see Castellani, Alberto, 1000

Bogle, G. V.
Estimation of Far-Field Dilution in Ocean Waste Discharges, 1148

Boland, John
see Ellingwood, Bruce, 1105

Boles, Walter W.
Lunar-Base Construction Equipment and Methods Evaluation, 30

Bond, A. J.
see Lehane, B. M., 375

Bondada, Murthy V. A., ed.
High Speed Ground Transportation Systems I: Planning and Engineering, 1362
see Sproule, William J., ed., 1328

Bonet, Luis
see Rodellar, José, 596

Bonneson, James A.
Bridge Size and Clearance Time of Single-Point Urban Interchange, 1032

Bonowitz, David
see Astaneh, Abolhassan, 1241

Bonta, James V.
see Wu, Tien H., 606

Borja, Ronaldo I.
Nonlinear Response of Vertically Oscillating Rigid Foundations, 430
see Kishnani, Sunil S., 431

Bosela, Paul A.
Failure of Engineered Facilities: Academia Responds to the Challenge, 745

Bottcher, Adelbert B.
see Cooper, A. Bryce, 1119

Bougacha, Samir
Analysis of Foundations on Fluid-Filled Poroelastic Stratum, 245
Dynamic Stiffness of Foundations on Fluid-Filled Poroelastic Stratum, 246

Boulanger, Jean
see Hechler, Jean-Jacques, 700

Boulay, C.
see Torrenti, J. M., 289

Boulos, Paul F.
see Rossman, Lewis A., 1133
see Voutchkov, Nikolay S., 337

Bou-Saab, Jamil F.
Runoff As A Resource, 1286

Bove, Paul M.
see Norville, H. Scott, 856

Boyce, L.
Probabilistic Material Degradation Under High Temperature, Fatigue, and Creep, 38

Boyle, Mark A.
Taking the Pain out of the Punch List, 1268

Boyle, W. C.
see Ham, R. K., 300

Boyle, William C.
see Kim, Yeong-Kwan, 367

Bradford, Mark Andrew
see Gao, Zhi, 269

Bradley, Margaret Dein
see Baker, Carol P., 1117

Branco, Fernando A.
Thermal Actions for Concrete Bridge Design, 938

Bravo, Edmundo B.
see Vanegas, Jorge A., 101

Brenner, R. Peter
see Al-Sanad, Hasan A., 412

Bridge, Russell Q.
see Bernard, Erik Stefan, 936

Briggs, Michael J.
see Camfield, Fred E., 1181

Bright, John C.
see Casangcapan, Manuel E., 584

Brill, E. D., Jr.
see Kao, J. -J., 356

Brill, E. Downey, Jr.
see Uber, James G., 6

Brito, Gertrudys
see Adkins, Dan F., 716

Brockway, C. E.
see Carter, D. L., 652

Broderick, L. L.
Experimental Investigation of Fluid-Filled Membrane Breakwaters, 1186

Brodland, G. Wayne
Large-Strain Analysis of Reinforced Membranes, 294
Mechanics and Failure of Multilayer, Reinforced Membranes, 717

Bronner, Patrick L.
see Reinschmidt, Kenneth F., 14

Brown, Colin B.
see Coffman, Harvey L., 899

Brown, Michael Clay
see Camp, Charles V., 67

Bruce, Donald A.
see Greenman, James H., 1276

Bruneau, Michel
Monitoring Well-Being of Civil Engineering Profession, 758

Bruttomesso, Douglas A.
Development of Interferometer for Acoustic Emission Testing, 285

Buba, Silas A.
see Elinwa, A. Uchechukwu, 124

Buchanan, Ian
see Leduc, Roland, 314

Buckner, C. Dale, ed.
see Darwin, David, ed., 1345

Budhu, M.
see Richards, R., Jr., 414

Bulleit, William M.
Reliability of Wood Structural Systems, 954

Buonopane, Stephen G.
Theory and History of Suspension Bridge Design from 1823 to 1940, 860

Burati, James L., Jr.
Implementing TQM in Engineering and Construction, 695
see Kim, Kwang W., 699
see Kim, Kwang W., 727

Burchell, A. J.
see Hulme, T. W., 7

Burges, Stephen J.
Confined Aquifer Parameters from a Pump Test Near an Impermeable Boundary, 542

Burgoyne, C. J.
The Bicycle Wheel as Prestressed Structure, 174

Burken, Joel G.
see Nair, Dhileepan R., 351

Burkholder, Earl F.
Using GPS Results in True 3-D Coordinate System, 1014

Burn, Donald H.
see Bender, Michael J., 1134

Burnett, Eric F. P.
see Brodland, G. Wayne, 294
see Brodland, G. Wayne, 717

Burnett, Mackenzie
see Dyni, Robert C., 1273

Burns, Robert L.
see Kulkarni, Ram B., 1049

Burris, D. R.
see Hatfield, K., 333

Burt, C. M.
Irrrigation–Canal—Simulation Model Usage, 627

Burt, Charles M.
see Parrish, John B., III., 631

Butler, H. Lee
see Johnson, Billy H., 492

Bysveen, Steinar
see Andersen, Knut H., 466

Caccese, V.
see Elgaaly, M., 838

Caccese, Vincent
Experimental Study of Thin Steel–Plate Shear Walls under Cyclic Load, 837

Cady, Philip D.
see Al-Qadi, Imad L., 1047

Çağdaş, Gülen
see Dökmeci, Vedia F., 1088

Calhoun, Charles C., Jr.
see Camfield, Fred E., 769

Call, Steven M.
see Astaneh-Asl, Abolhassan, 944

Camfield, Fred E.
Developing Coastal Engineers, 769
Longshore Transmission of Reflected Waves, 1181

Camp, Charles V.
GIS Procedure for Developing Three-Dimensional Subsurface Profile, 67

Campbell, T. G.
see Rogers, C. A., 18

Campbell, T. I.
Friction in Bridge Bearings with Contaminated TFE Slide Surface, 985

Canavan, T. Christopher
Foreign Investment in Latin America: A Second Look, 1317

Cannon, M. E.
Kinematic Ambiguity Resolution with High-Precision C/A Code Receiver, 1025

Cappellucci, Anthony J.
see Piper, Richard A., 622

Caraway, Patrick H.
see O'Connor, James T., 128

Carbajal-Quintas, Bettina
see Rubin, Robert A., 784

Cardou, Alain
Suspension Clamp and ACSR Electrical Conductor Contact Conditions, 136

Carmichael, R. Frank, III.
see Hudson, Ronald W., 1031

Carol, Ignacio
Viscoelasticity with Aging Caused by Solidification of Nonaging Constituent, 282

Carpenter, James E.
see Roeder, Charles W., 913
see Schneider, Stephen P., 914

Carr, Robert I.
Cost, Schedule, and Time Variances and Integration, 96

Carr, William P., ed.
Pacific Rim TransTech Conference—Volume II: International Ties, Management Systems, Propulsion Technology, Strategic Highway Research Program, 1375

Carroll, William J.
World Engineering Partnership for Sustainable Development, 783

Carter, D. L.
Controlling Erosion and Sediment Loss from Furrow-Irrigated Cropland, 652
Furrow Irrigation Erosion Lowers Soil Productivity, 651

Carter, Philip O.
Techniques for Coordinating and Managing Growth, 1093

Cartwright De Couto, Ann P.
Responsible Management of Tourist Island, 782

Cartwright, Lawrence G.
see Kub, Edward G., II., 737

Casamitjana, Xavier
Vertical Distribution of Particles in Stratified Lake, 326

Casangcapan, Manuel E.
DACL System Dynamic Performance. I: Response-Prediction Analysis, 583
DACL System Dynamic Performance. II: Laboratory Model Testing, 584

Cassidy, Michael J.
Proposed Model for Predicting Motorist Delays at Two-Lane Highway Work Zones, 1029
see Wang, Mu-Han, 1052

Castellani, Alberto
Concrete Toughness After 20 Years, 885
Reinforced Concrete Columns under Cyclic Axial Compressive Forces, 1000

Cavuoto, Stephen J.
see Larish, John J., 1306

Cayes, Lloyd R.
see Tiedeman, Jane L., 875

Cebon, D.
see Hardy, M. S. A., 253

Cedolin, Luigi
see Bažant, Zdeněk P., 867

Çelebi, Mehmet
Seismic Reponses of Two Adjacent Buildings Part I: Data and Analyses, 946
Seismic Response of Eccentrically Braced Tall Building, 872
Seismic Responses of Two Adjacent Buildings Part II: Interaction, 947

Cempel, C.
Efficiency of Vibrational Energy Dissipation by Moving Shot, 955

Cerco, Carl F.
Three-Dimensional Eutrophication Model of Chesapeake Bay, 361

Cesare, M.
Risk-Based Bridge Management, 1076

Chaallal, Omar
see Do, Minh-Tan, 703

Chacon, Michael A.
see Winstanley, Graham, 62

Chadderton, Ronald A.
Land-Grant Policy and Engineering Education, 805
Misesian Assessment of Systems Analysis, 797

Chajes, M. J.
see Zhang, L., 207

Chajes, Michael J.
Analysis of Multiple-Bay Frames Using Continuum Model, 834

Chambers, Richard E., ed.
Plastics Composites for 21st Century Construction, 1377

Chameau, Jean-Lou A., ed.
see Frost, J. David, ed., 1357

Chameau, J-L.
see Sivakugan, N., 436

Chan, H. C.
Analytical Crack Model for Reinforced-Concrete Structures, 881

Chan, Patrick
see Wang, Mu-Han, 1052

Chan, W. S.
see Shah, D. K., 29

Chan, W. T.
see Fwa, T. F., 1055

Chandrashekhara, K.
see Bhimaraddi, A., 42

Chang, Ching S.
see Ma, Lun, 475

Chang, G. Z.
see Huang, L. H., 243

Chang, K. C.
see Elkordy, M. F., 58

Chang, Kai-Kuo
see Stephanedes, Yorgos J., 1061

Chang, Moo Been
Removal of SO_2 and NO from Gas Streams with Combined Plasma Photolysis, 324

Chang, Shyue Koong
Optimal Dimensions of Bus Service Zones, 1065

Chang, Wen F.
see Ghafoori, Nader, 714

Chang, Wen-Jaur
Sprinkler Droplet Effects on Infiltration. I: Impact Simulation, 589
Sprinkler Droplet Effects on Infiltration. II: Laboratory Study, 590

Channakeshava, Chidambaram
Nonlinear FE Analysis of Plain Concrete Pavements with Doweled Joints, 1078

Chanson, H.
Self-Aerated Flows on Chutes and Spillways, 506

Chapra, Steven C.
Toxicant-Loading Concept for Organic Contaminants in Lakes, 11

Charnvarnichborikarn, P.
see Polyzois, D., 953

Chase, G. W.
Effective Total Quality Management (TQM) Process, 693

Chase, Gerald W.
see Federle, Mark O., 686

Chassiakos, Athanasios P.
see Stephanedes, Yorgos J., 1028

Chau, K. W.
see Pau, S. H., 114

Chaudhari, Sanjeev
see Tare, Vinod, 359

Chellam, Shankararaman
Laminar Flow with Slip in Channels with Uniformly Porous Walls, 500

Chen, Bang-Fuh
Dynamic Pressure of Water and Sediment on Rigid Dam, 232

Chen, C. -C.
Improved Time-History Analysis for Structural Dynamics. I: Treatment of Rapid Variation of Excitation and Material Nonlinearity, 296
see Robinson, A. R., 297

Chen, Carl W.
Acidification Potential of Snowpack in Sierra Nevada, 12

Chen, Charles C. T.
Flexible Thin Shell Elements Under Nonwhite and Nonzero Mean Loads, 248

Chen, Charng-Ning
Critical Rainfall Duration for Maximum Discharge from Overland Plane, 555

Chen, Cheng
see Astaneh, Abolhassan, 1241

Chen, Cheng-lung
Unique Laminar-Flow Stability Limit Based on Shallow-Water Theory, 540

Chen, Ching-Jen
see Tsai, Whey-Fone, 571

Chen, Faliang
Analysis of Large Deflection Dynamic Response of Rigid-Plastic Beams, 225

Chen, H. L.
Dynamic Characterization of Prestressed Rods in Stressed Timber Systems, 979

Chen, J. C.
see Surampalli, Rao Y., 329

Chen, J. J.
see Weng, C. C., 715

Chen, Jia-Yuan
see Huang, Min-Chih, 1153

Chen, Ruobo
see Caccese, Vincent, 837

Chen, S.
see Sharit, J., 51
see Ulanicki, B., 1136

Chen, W. F.
see Duan, L., 852
see Liew, J. Y. Richard, 987
see Liew, J. Y. Richard, 988

Chen, Yit-Jin
Undrained Strength Interrelationships Among CIUC, UU, and UC Tests, 478

Cheng, A. H-D.
see Zhang, L., 207

Cheng, F. Y.
Computed Versus Observed Inelastic Seismic Low-Rise RC Shear Walls, 990

Cheng, Franklin Y.
see Ger, Jeng-Fuh, 853
see Ger, Jeng-Fuh, 854

Cheng, Nai-Tsang
see Adeli, Hojjat, 36

Cheng, Paul
see Lepofsky, Mark, 1044

Cheng, S.
see Shi, Y. P., 182

Cheng, Shun
see Tan, Seng C., 710

Cheong, H. F.
see Wang, C. M., 1173

Chertow, Mark
Whistle-Blowing—A Professional Responsibility, 759

Cheung, Kevin C. K., ed.
Twenty-First Century Timber Engineering, 1389

Cheung, Y. K.
see Chan, H. C., 881
see Di, Shenglin, 923
see Di, Shenglin, 924

Chi, Shue-Yeong
see Chiou, Yaw-Jeng, 203

Chiew, Y. M.
Effect of Spoilers on Wave-Induced Scour at Submarine Pipelines, 1171
see Chin, C. O., 1160

Chilcott, Richard E.
see Casangcapan, Manuel E., 583
see Casangcapan, Manuel E., 584

Childs, J. L.
Spatial and Seasonal Variation of Furrow Infiltration, 585

Chin, C. O.
Effect of Bed Surface Structure on Spherical Particle Stability, 1160

Chin, Chee-Kiong
Finite Element Method for Buckling Analysis of Plate Structures, 864

Chinn, Stephen P.
Shelter from the Storm, 1245

Chiou, Yaw-Jeng
Limit Loads of Buried Pipelines in Inelastic Soil Medium, 203

Chirnside, A. E. M.
see Ritter, W. F., 620

Chiu, Chao-Lin
Application of Probability and Entropy Concepts in Pipe-Flow Study, 535
see Crissman, Randy D., 569

Chmaytelli, Aref
see O'Connor, James T., 748

Chopra, Anil K.
see Goel, Rakesh K., 977

Chou, Jung-Huai
see Kuo, Shyh-Rong, 806

Chou, Karen C.
Fuzzy-Bayesian Approach to Reliability of Existing Structures, 991

Chou, Y. J.
Knowledge-Based System for Flexible Pavement Structural Evaluation, 1057

Chow, John, ed.
Microcomputers in Transportation, 1372

Chowdhury, Manzoor E.
see Griffin, Ronald C., 1142

Chowdhury, R. N.
Rational Polynomial Technique in Slope-Reliability Analysis, 487

Chowdhury, Showkat J.
Analysis of Mixing Layer by Rate-Dependent Turbulence Model, 249

Chowdhury, Zaid K.
Incorporation of Submicron Colloids into Larger Floc in Water Treatment, 309

Chrest, Anthony P.
Quality Improvement Experiences in E/A Firm, 682

Christensen, George Lee
see Christensen, Jimmy Roland, 307

Christensen, Jimmy Roland
Mechanisms for Overdosing in Sludge Conditioning, 307

Christiansen, N.
see Sumer, B. M., 1174

Christodoulou, George C.
Energy Dissipation on Stepped Spillways, 529
Incipient Hydraulic Jump at Channel Junctions, 516

Christophersen, Hans Peter
see Dyvik, Rune, 465

Chu, J.
Instability of Granular Soils Under Strain Path Testing, 429

Chu, S. Y.
see Chung, L. L., 276

Chu, Shu Tung
Capillary-Tube Infiltration Model, 617

Chucheepsakul, S.
see Wang, C. M., 1173

Chui, H. K.
see Fang, Herbert H. P., 304

Chun, Brian
see Meehan, Richard L., 771

Chung, L. L.
Optimal Direct Output Feedback of Structural Control, 276

Church, Richard L.
Modeling School Utilization and Consolidation, 1089

Chwang, Allen T.
see Tahara, Yusuke, 195
see Yu, Xiping, 256

Clark, Robert M.
Modeling Contaminant Propagation in Drinking-Water Distribution Systems, 319

Clausen, T.
see Lohani, V. K., 582

Clements, Kenneth M.
see Hudak, Paul F., 334

Clemmens, A. J.
Description and Evaluation of Program: DUFLOW, 636

Clough, G. Wayne
EPB Shield Tunneling in Mixed Face Conditions, 472

Cloutier, Louis
see Cardou, Alain, 136

Clukey, Edward C., ed.
see Nelson, Priscilla P., ed., 1349

Coates, Geoffrey H.
Facilitating Sustainable Development: Role of Engineer, 780

Coffey, B. M.
Modeling Soluble Manganese Removal by Oxide-Coated Filter Media, 342

Coffman, Harvey L.
Seismic Durability of Retrofitted Reinforced-Concrete Columns, 899

Cohenca-Zall, Dora
see Laufer, Alexander, 107

Cohn, Louis F., ed.
Computing in Civil and Building Engineering, 1346

Cohn, Louise F.
see Koushki, Parviz A., 1077

Cohn, M. Z.
Optimum Limit Design of Continuous Prestressed Concrete Beams, 1007
see Lounis, Z., 851

Cole, Thomas
see Cerco, Carl F., 361

Collins, M. P.
see Vecchio, F. J., 1009

Collura, John
Computer-Use Factors in Transportation Engineering Project Management, 76

Collyard, Cynthia S.
see Tavakoli, Amir, 681

Colotti, Vincenzo
Shear Behavior of RC Structural Walls, 847

Combs, Phil G.
see Johns, Derek D., 544

Committee on Operation and Maintenance of Irrigation and Drainage Systems of the Irrigation and Drainage Division
Management, Operation and Maintenance of Irrigation and Drainage Systems, 3

Committee on Oxygen Transfer Standards of the Special Standards Division, ASCE
Measurement of Oxygen Transfer in Clean Water, 1371

Committee on Pipeline Planning of the Pipeline Division of the American Society of Civil Engineers
Pressure Pipeline Design for Water and Wastewater, 1378

Connor, Jerome J.
see Gantes, Charis, 175
see Kaneko, Yoshio, 188
see Kaneko, Yoshio, 189

Constantinou, M. C.
see Makris, Nicos, 234
see Makris, Nicos, 247
see Makris, Nicos, 993
see Mokha, A. S., 819

Constantinou, Michalakis C.
see Nagarajaiah, Satish, 813
see Nagarajaiah, Satish, 971

Conte, Enrico
Settlement Analysis of Layered Soil Systems by the Stiffness Method, 421

Contractor, Dinshaw N.
Informed Use and Potential Pitfalls of Canal Models, 630

Converse, Hugh, ed.
see Magoon, Orville T., ed., 1336

Conway, Ted A.
Time-Dependent Response of Three-Filament Cord, 197

Cook, Ronald A.
Behavior of Chemically Bonded Anchors, 961

Cook, William D.
see Harries, Kent A., 1010

Cooper, A. Bryce
Basin-Scale Modeling as Tool for Water-Resource Planning, 1119

Coopersmith, Randi F.
Growth Management in the City of San Diego: Planning the Future Now, 1095

Corapcioglu, M. Yavuz
Dynamic Compaction of Saturated Porous Columns, 241

Corbu, Ion
see Crissman, Randy D., 569

Corotis, Ross B.
see Ellingwood, Bruce, 1105
see Zimmerman, James J., 818

Corven, John A.
Arches For A Parkway, 1290

Costello, George A.
see Conway, Ted A., 197

Costley, R. Daniel
see Bruttomesso, Douglas A., 285

Cottell, Michael N. T.
Facilitating Sustainable Development: Is Our Approach Correct?, 779

Coull, Alex
Lateral Load Distribution in Asymmetrical Tall Building Structures, 863

Crawley, Philip D.
Optimal Operation of Multiple-Reservoir System, 1101

Creighton, S.
see Austin, M. A., 54

Crisinel, Michel
see Daniels, Byron J., 807
see Daniels, Byron J., 808

Crissman, Randy D.
Uncertainties in Flow Modeling and Forecasting for Niagara River, 569

Criswell, Marvin E.
see Bulleit, William M., 954

Crittenden, John C.
see Notthakun, Sawang, 343

Crocker, Katherine H.
Commercial Growth Management Techniques in San Francisco, 1097

Crockford, William W.
Role of Principal-Plane Rotation in Flexible Pavement Deformation, 1035

Cross, K. G.
see Garsden, B. R., 667

Cross, W. Bradford
Seismic Performance of Joist-Pocket Connections. I: Modeling, 974
Seismic Performance of Joist-Pocket Connections. II: Application, 975

Crouch, J. D.
see Wang, Henry T., 1151

Crouse, C. B.
Dynamic Tests of Pipe Pile in Saturated Peat, 467

Crow, Martha E.
see Chinn, Stephen P., 1245

Crull, W. W.
see Williams, A. N., 1184

Crump, Eric L.
Fuzzy-Set Approach for Optimizing Sludge Application Land Selection, 1091

Culp, Gordon
Implementing TQM in Consulting Engineering Firm, 685

Cummings, John R.
see Roth, Steven R., 1244

Czarnecki, R. Martin
Ultimate Loud Capacities of Expansion Anchor Bolts, 144

Dafalias, Yannis F.
Planar Double-Slip Micromechanical Model for Polycrystal Plasticity, 223

Dagher, H. J.
System Reliability Concepts in Design of Transmission Lines, 823

Dahab, M. F.
Solid-Waste Management: Cooperative Extension Initiative, 800

Dai, Guang-qing
see Wu, Chao, 547

Dakoulas, Panos
Earth Dam–Canyon Interaction Effects for Obliquely Incident SH Waves, 476
Response of Earth Dams in Semicylindrical Canyons to Oblique SH Waves, 152
see Yu, Shinyuan, 468

Dal, Taylan
see Beliveau, Yvan, 120
see Beliveau, Yvan J., 92

Dall'Asta, Andrea
Nonlinear Analysis of Beams Prestressed by Unbonded Cables, 190

Dalphin, Richard J.
Faculty Attitudes about Progress of Metrication, 776

Dalrymple, Robert A.
see Losada, Iñigo J., 1168
see Suh, Kyung Duck, 1176

Daly, Steven F.
Wave Propagation in Ice-Covered Channels, 546

Dana, William R.
see Zarghamee, Mehdi S., 958
see Zarghamee, Mehdi S., 959

Danay, A.
Seismic-Induced Slip of Concrete Gravity Dams, 812

Dandy, Graeme C.
see Crawley, Philip D., 1101

Daniel, David E.
Compacted Clay Liners and Covers for Arid Sites, 387
see Shelley, Thomas L., 377

Daniels, Byron J.
Composite Slab Behavior and Strength Analysis. Part I: Calculation Procedure, 807
Composite Slab Behavior and Strength Analysis. Part II: Comparisons with Test Results and Parametric Analysis, 808

Darbandi, M.
see Alishahi, M. M., 37

Darden, Douglas
see Shea, Conor, 1107

Dargush, G. F.
see Makris, Nicos, 247
see Makris, Nicos, 993

Darilek, Glenn T.
see Laine, Daren L., 1262

Darwin, David, ed.
Composite Construction in Steel and Concrete II, 1345

Das, Debendra K.
Calculation of Gas Hydrate Dissociation with Finite-Element Model, 147

Das, Y. C.
see Vallabhan, C. V. Girija, 895

Daugherty, Charles
Getting Along: The Geotech and the CM, 1256

Davalos, J. F.
Bending Stiffness of Stress-Laminated Timber Decks with Butt Joints, 901
Effective Flange Width for Stress-Laminated T-System Timber Bridges, 859

Davidson, Bret
see Tumeo, Mark A., 344

Davidson, J.
see Goulter, I., 1127
see Jacobs, P., 71

Davis, Allen P.
see McCuen, Richard H., 774

Davis, Cynthia
see McCuen, Richard H., 1353

Davis, D.
see Ulanicki, B., 1136

Davis, Gary A.
Estimating Freeway Demand Patterns and Impact of Uncertainty on Ramp Controls, 1060

Davis, R. O.
Stability of Motions of Translational Landslides, 399

Day, Robert W.
Accidents on Interstate Highways Caused by Blowing Dust, 743
Certificate of Merit in Civil Litigation, 789
Expansion Potential According to *Uniform Building Code*, 442
Geotechnical Engineering: Risky Profession with Many Issues and Problems, 777
Performance of Historic Adobe Structure, 747
Performance of Utility-Trench Shoring: Case Study, 734
Strict Liability in Civil Engineering Practice, 770
Surficial Slope Failure: A Case Study, 755

De Feis, George L.
ASCE Activities Become Global Issues, 786

De Nicola, Anthony
Tensile and Compressive Shaft Capacity of Piles in Sand, 489

Deacon, Terry
South Africa at the Crossroads, 1323

Dean, Robert G.
see Kriebel, David L., 1159

Deffenbaugh, Ronald L.
Total Quality Management at Construction Jobsites, 688

DeFrain, Leo
see Nowak, Andrzej S., 1082

DeGroot, Don J.
Estimating Autocovariance of In-Situ Soil Properties, 382

del Valle, Ricardo
Dependence of Coefficient *K* on Grain Size, 1180

Delamore, M.
see Benson, S. M., 614

Delgado, A. H.
see Paroli, R. M., 702

Dell, Marcus J.
see Brodland, G. Wayne, 294

DeLony, Eric
Landmark American Bridges, 1367

Delton, James
see Wang, Kelvin C. P., 78

DelVecchio, Gregory M.
Probabilistic Screening of Ground-Water Contaminants, 315

Demski, Stephen
Resistance to Change: Why Your TQM Efforts May Fail, 692

Denning, James
A Dome To Remember, 1292
More Than an Underground Success, 1299
OCEA Goes Green, 1252
Seismic Retrofitting: Spending to Save, 1203
Small Dam Rehabs, 1192
Small-Government GIS, 1243

Dente, Giovanni
see Conte, Enrico, 421

Der Kiureghian, A.
see Li, Chun-Ching, 215

Derian, Luther
Geosynthetics Conquer the Landfill Law, 1301

Dershimer, George
Finding Your Way through Conflict, 671

Desai, C. S.
Constitutive Model for Cyclic Behavior of Clays. II: Applications, 418
see Davis, R. O., 399
see Fishman, K. L., 453
see Wathugala, G. W., 417

Desai, Milind R.
see Nazarian, Soheil, 444

Desai, Y. M.
see Yu, P., 291
see Yu, P., 292

DeVantier, Bruce A.
Review of GIS Applications in Hydrologic Modeling, 1115

DeVany, Thomas S.
see Federle, Mark O., 87

Devgan, Ashutosh
see Kemeny, John M., 447

Devinny, Joseph S.
see Islander, Robert L., 15

DeWolf, John T.
see Frantz, Patricia G., 791

Dezi, Luigino
Creep in Composite Continuous Beams: I: Theoretical Treatment, 925
Creep in Composite Continuous Beams. II: Parametric Study, 926
Simplified Creep Analysis of Composite Beams with Flexible Connectors, 890
Viscoelastic Heterogeneous Structures with Variable Structural System, 162
see Dall'Asta, Andrea, 190

Di, Shenglin
Nonlinear Analysis of RC Shell Structures Using Laminated Element. I, 923
Nonlinear Analysis of RC Shell Structures Using Laminated Element. II, 924

Diaz, Carlos F.
Nondeterministic Networking Methods, 83

Diaz, Manuel A.
see Hudson, Ronald W., 1031

DiGiano, Francis A.
Predicting Release of PCBs at Point of Dredging, 302

Dilger, Walter H.
see Rao, S. V. Krishna Mohan, 1008

Dilmaghanian, R.
see Burgoyne, C. J., 174

DiMaggio, Frank L.
see Messana, Salvatore J., 233

Dimentberg, M. F.
Toppling of Computer-Type Equipment under Base Excitation, 156

Diplas, Panayiotis
see Fripp, Jon B., 521

Dixit, Shrikant
see Beliveau, Yvan, 120

Dixit, Shrikant S.
see Beliveau, Yvan J., 92

Djokic, Dean
Application of GIS Network Routines for Water Flow and Transport, 1114
see Evans, Thomas A., 69

Djukic, D. S.
Effect of Shear on Simple Buckling Problem, 213

Do, Minh-Tan
Fatigue Behavior of High-Performance Concrete, 703

Dodds, G. T.
see Madramootoo, C. A., 658

Dökmeci, Vedia F.
Multiobjective Land-Use Planning Model, 1088

Dolan, Charles W.
Design Projects in Civil Engineering Curriculum, 793

Domínguez, José
Earthquake Analysis of Arch Dams. II: Dam-Water-Foundation Interaction, 178
see Maeso, Orlando, 177

Donald, J.
see Kouwen, N., 1118

Dooge, J. C. I.
Step-Function Response of Muskingum Reach, 609

Doré, Claude
see Tinawi, René, 746

Dorweiler, Vernon P.
Antitrust Analysis of Competitive Bidding in Bid Depository Systems, 760

Dounias, George T.
Numerical Analysis of Drained Direct and Simple Shear Tests, 485

Downey, A. B.
see Koutsopoulos, H. N., 1054

Downey, Allen B.
see Koutsopoulos, Haris N., 1083

Downs, L. Vaughn
The Mightiest of Them All: Memories of Grand Coulee Dam, 1373

Dozzi, S. Peter
see AbouRizk, Simaan M., 102

Drago, Joseph A.
see Lichty, Craig W., 1216

Drescher, Andrew
Permanent Deformation in Asphalt Concrete, 704

Drucker, Daniel C.
Triaxial Test Instability of a Nonassociated Flow-Rule Model, 219

Drumm, Eric C.
Subsidence Effects on Embankments: Combined Empirical-FEM Approach, 384

Du, C.
see Elgaaly, M., 838

Duan, L.
Moment-Curvature Relationships for Dented Tubular Sections, 852

Duffy, Kevin J.
see Adali, Sarp, 41

Duncan, J. Michael
Limitations of Conventional Analysis of Consolidation Settlement, 454

Dunker, K. F.
see Planck, S. M., 861

Durnford, Deanna
Experimental Study of Processes and Particle-Size Distributions of Eroded Soil, 607

Durrani, Ahmad J.
see Yalçın, Üsame, 883

Dusenberry, Donald O.
What Sank the Lacey Murrow?, 1293

Dutt, O.
see Paroli, R. M., 702

Dwyer, Brian
see Hanson, Adrian T., 350

Dyni, Robert C.
Speedy Backfilling for Old Mines, 1273

Dyvik, Rune
Field Tests of Anchors in Clay. I: Description, 465
see Andersen, Knut H., 466

Eagan, Patrick D.
Enhancing Value of Environmental Data: Data Lineage Reporting, 298

Easa, Said M.
Lateral Clearance Needs on Compound Horizontal Curves, 1034
Reliability-Based Design of Intergreen Interval at Traffic Signals, 1045
Smooth Boundary Approximation for Directly Computing Irregular Area, 1020
Unified Design of Horizontal Circular Curves, 1033
Urban Trip Distribution in Practice. I: Conventional Analysis, 1079
Urban Trip Distribution in Practice. II: Quick Response and Special Topics, 1080

Easley, Mark
see Silverston, Elliot, 1298

East, E. William
Standardizing Scheduling Data Exchange, 94

Eberhard, Marc O.
Behavior-Based Method to Determine Design Shear in Earthquake-Resistant Walls, 840

Edge, Billy L., ed.
Coastal Engineering—1992, 1334

Edil, Tuncer B.
see Othman, Majdi A., 409

Egger, David F.
see Frerichs, Victoria, 1277

Ehsan, Fazl
Effect of Sidewalk Vents on Bridge Response to Wind, 832

El Halim, A. O. Abd
Unwanted Legacy of Asphalt Pavement Compaction, 1086

El Sanhouri, Ibrahim
see Koutsopoulos, Haris N., 1083

El-Ali, Nasser D.
see Bishara, Alfred G., 827

Eldin, Neil N.
Rubber-Tire Particles as Concrete Aggregate, 729

Scrap Tires: Management and Economics, 372

Elgaaly, M.
Postbuckling Behavior of Steel-Plate Shear Walls under Cyclic Loads, 838

Elgaaly, Mohamed
see Caccese, Vincent, 837

Elgar, Steve
Dispersion, Nonlinearity, and Viscosity in Shallow-Water Waves, 1167
see Liu, Zhenhua, 1155

Elinwa, A. Uchechukwu
Construction Cost Factors in Nigeria, 124

El-Jayyousi, Jalal
see Gunnink, Brett W., 439

Elkordy, M. F.
Neural Networks Trained by Analytically Simulated Damage States, 58

Elling, R. E.
see Navacc, S., 185

Ellingwood, Bruce
Assessing Cost of Dam Failure, 1105

Ellingwood, Bruce R.
see Mori, Yasuhiro, 897

Ellis, G. W.
ARMA Processes and Reliability-Based Design of Wastewater-Treatment Facilities, 327

Ellis, J. Hugh
see Zimmerman, James J., 818

Elms, D. G.
see Richards, R., Jr., 414

Elnashai, A. S.
see Izzuddin, B. A., 180

El-Rayes, Khaled
see Moselhi, Osama, 123

El-Sharkawy, Ahmed R.
see Farid, Foad, 690

El-Sheikh, A. I.
Experimental Study of Behavior of Composite Space Trusses, 848

Elsworth, Derek
Analysis of Piezocone Dissipation Data Using Dislocation Methods, 470

Elvin, Alex
see Sunder, S. Shyam, 268

Emery, John A.
Stabilization of Jointing Sand in Block Paving, 1036

Enevoldsen, Ib
Reliability-Based Optimization of Series Systems of Parallel Systems, 865

Eng, Steven
Water Pipelines: Tackling To..ics, 1238

Engberg, R. A.
Concentrations, Distribution, and Sources of Selenium from Irrigated Lands in Western United States, 618

Engelhardt, M. D.
Cyclic-Loading Performance of Welded Flange–Bolted Web Connections, 1006

Engroff, E. C.
see Ham, R. K., 300

Enno "Ed" Koehn
Ethical Issues Experienced by Engineering Students and Practitioners, 801

Ensor, W. Douglas
Drilling with Direction, 1271

Entz, T.
see Beke, G. J., 587
see Beke, G. J., 588

Ergin, Ayşen
Comparative Study on Breaking Wave Forces on Vertical Walls, 1179

Erickson, Bradley P.
MASSPORT Modernization, 1223

Erlich, M.
see Lohani, V. K., 582

Ervine, D. A.
Factors Affecting Conveyance in Meandering Compound Flows, 576

Esen, Ismail I.
Design of Sewers Based on Minimum Velocity, 336

Eskridge, W. Frank
see Sanders, Steve R., 687

Estalrich, J.
see Trilla, J., 1137

Ettema, R.
see Nixon, W. A., 44

Ettema, Robert
Listening to Research Clients, 803

Ettouney, Mohammed
see Weidlinger, Paul, 816

Evans, Ginger S.
The Denver Airport: Managing a Megaproject, 1236

Evans, Thomas A.
Development and Application of Expert Geographic Information System, 69

Everard, J.
see Parsons, B. L., 226

Everett, John G.
CRANIUM: Device for Improving Crane Productivity and Safety, 82
Strategy for Passing the Civil P.E. Exam, 788

Fabbri, Paolo, ed.
Coastlines of the Mediterranean, 1341

Fabrikant, V. I.
Half-Plane Crack Under Normal Load: Complete Solution, 281

Fairweather, Virginia
Dutch Globetrotting Pays Off, 1321
Going International: Profit or Peril?, 1309
World Bank Update, 1318

Falvey, H. T.
see Strelkoff, T. S., 628

Fang, H. H. P.
Biological Wastewater Treatment in Reactors with Fibrous Packing, 357

Fang, Herbert H. P.
Maximum COD Loading Capacity in UASB Reactors at 37°C, 304

Fang, I-Kuang
Cyclic Behavior of Moderately Deep HSC Beams, 951

Fansler, Kevin S.
see Singhal, Avinash C., 35

Farhang, Kambiz
see Ghafoori, Nader, 218

Farhey, Daniel N.
RC Flat Slab–Column Subassemblages Under Lateral Loading, 915

Farid, Foad
Managing for Creativity and Innovation in A/E/C Organizations, 690

Farooq, Shaukat
Slow Sand Filtration of Secondary Effluent, 338

Farrar, Charles R.
Failure Modes of Low-Rise Shear Walls, 143

Fatemi, M. J.
see Campbell, T. I., 985

Fazio, Paul
see Moselhi, Osama, 109

Feda, J.
Service Load of Short, Large-Diameter Bored Piles, 462

Federle, Mark O.
Applying Total Quality Management to Design and Construction, 686
Model of Career Choice for Craftworkers, 87
see Maloney, William F., 666
see Maloney, William F., 675

Fedra, Kurt
see Lassarre, Sylvain, 1041

Felber, A. J.
see Stiemer, S. F., 74

Feldman, Arlen D.
see DeVantier, Bruce A., 1115

Feldman, Mordechai
see Shvartser, Leonid, 1141

Felimban, Abdurrahman A.
see Koushki, Parviz A., 1077

Feng, Maria Qing
Application of Hybrid Sliding Isolation System to Buildings, 272
Friction-Controllable Sliding Isolation System, 259

Fenner, Thomas J.
Scoping Out Scour, 1220

Fenton, Gordon A.
see Vanmarcke, Erik H., 287

Fenves, Gregory L.
Effect of Contraction Joints on Earthquake Response of Arch Dam, 8

Ferguson, John F.
see Long, Jennifer L., 316

Ferguson, Kendall
Attitude Determination with Ashtech 3-D Direction Finding System, 1015

Fermán Almada, José Luis, ed.
Coastal Management in Mexico: the Baja California Experience, 1335

Fero, R. L.
see Ham, R. K., 300

Fields, Melissa
see Gasparini, D. A., 742

Figueroa, J. L.
see Aglan, H. A., 222

Filiatrault, A.
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. I: Pseudostatic Analysis, 887
Damage to Cable-Stayed Bridge During 1988 Saguenay Earthquake. II: Dynamic Analysis, 888

Filiatrault, André
see Tinawi, René, 746

Findler, Nicholas V.
Distributed Air-Traffic Control. I: Theoretical Studies, 1072
Distributed Air-Traffic Control. II: Explorations in Test Bed, 1073

Finno, Richard J.
Finite Element Analyses of HDR-4 Excavation, 13

Firth, Charles R.
see Dusenberry, Donald O., 1293

Fischer, David W., ed.
see Fermán Almada, José Luis, ed., 1335

Fisher, Deborah J.
see Giannotti, Alejandro C., 665
see Murtaza, Mirza B., 88

Fishman, K. L.
Field Behavior of Instrumented Geogrid Soil Reinforced Wall, 453
see Lee, Seung W., 1056

Flora, Joseph R. V.
Modeling Substrate Transport into Biofilms: Role of Multiple Ions and pH Effects, 355

Florentin, B.
see Genovez, A., 660

Fogel, Martin M.
see Risley, John C., 1121

Foo, H. C.
Experimental Study of Timber Trusses and Joints, 878

Fortin, Peter S.
see Ensor, W. Douglas, 1271

Fowler, David W.
see Rebeiz, Karim S., 713
see Wheat, Dan L., 728

Fox, Nathaniel S.
see Lawton, Evert C., 389

Foxworthy, John E.
see McNeilan, Thomas W., 1196

Franco, Nilson
Three-Dimensional Model for Wood-Pole–Strength Predictions, 931

Frangopol, Dan M.
see Katsuki, Satoshi, 908
see Katsuki, Satoshi, 909

Frank, R.
see Lehane, B. M., 375

Frantz, Gregory C.
see Frantz, Patricia G., 791

Frantz, Patricia G.
Collaboration in the Engineering Classroom, 791

Franzen, Tomas, ed.
see Sharp, John C., ed., 1381

Fredsoe, J.
see Sumer, B. M., 1174

Freilich, M. H.
see Elgar, Steve, 1167

French, Richard H.
Alluvial Fan: Proposed New Process-Oriented Definitions for Arid Southwest, 1139

Frerichs, Victoria
Haunted by the Past, 1277

Fridley, K. J.
see Rosowsky, D. V., 994

Fridley, Kenneth J.
see Bulleit, William M., 954
see Philpot, Timothy A., 1012

Fripp, Jon B.
Surface Sampling in Gravel Streams, 521

Fritschel, Paul R.
see Ham, Robert K., 370

Froehlich, David C.
Short-Duration-Rainfall Intensity Equations for Drainage Design, 643

Frost, J. David, ed.
Digital Image Processing: Techniques and Applications in Civil Engineering, 1351
Geographic Information Systems and their Application in Geotechnical Earthquake Engineering, 1357

Frostig, Y.
High-Order Behavior of Sandwich Beams with Flexible Core and Transverse Diaphragms, 204
High-Order Buckling Analysis of Sandwich Beams with Transversely Flexible Core, 176

Fu, Deng-Tsuang
see Lee, Hong-Yuan, 496

Fu, Gongkang
Multimodal Simulation Method for System Reliability Analysis, 217

Fu, H. C.
see Yang, Henry T. Y., 857

Fuhr, Peter L.
Stress Monitoring of Concrete Using Embedded Optical Fiber Sensors, 935

Fujii, Shunji
see Feng, Maria Qing, 259

Fujino, Y.
Vibration Control by Multiple Tuned Liquid Dampers (MTLDs), 1003

Fujino, Yozo
see Pacheco, Benito M., 918
see Pacheco, Benito M., 1283

Fuller, Jonathan E.
see French, Richard H., 1139

Fullerton, W. T.
see O'Brien, J. S., 507

Funk, J. E.
see Wood, Don J., 550

Furlong, Richard W.
Slenderness of Columns in Braced Frames, 998

Furumura, F.
see Sakumoto, Y., 983

Furuya, Hiroshi
Statistical Sensitivity Analysis of Lattice Space Structures, 31

Fwa, T. F.
Priority Rating of Highway Maintenance Needs by Neural Networks, 1055
see Shi, X. P., 1085

Gable, Frank, ed.
see Sorensen, Jens, ed., 1368

Galambos, Theodore V.
see Ito, Mitsuru, 879

Galdos, N. H.
Methodology for Impact Factor of Horizontally Curved Box Bridges, 916

Gallagher, D. L.
see Coffey, B. M., 342

Galliford, Peter
Infrastructure and Environmental Improvements: A United Kingdom Contractor's View, 781

Ganduscio, Salvatore
see Romano, Filippo, 214
see Romano, Filippo, 810

GangaRao, H. V. S.
see Chen, H. L., 979

Gantes, Charis
Simple Friction Model for Scissor-Type Mobile Structures, 175

Gao, Zhi
Time-Dependent Shortening of Slender RC Columns, 269

Garcia, Marcelo H.
Hydraulic Jumps in Sediment-Driven Bottom Currents, 559

Garcia-Navarro, P.
Numerical Modeling of Flood Propagation through System of Reservoirs, 514

Gardner-Morse, Mack G.
Modal Identification of Cable-Stayed Pedestrian Bridge, 997

Garen, David C.
Revised Surface-Water Supply Index for Western United States, 1128

Garrett, J. H., Jr.
see Linkenheld, J. S., 2

Garsden, B. R.
Information Management Power Station Construction at Stanwell, 667

Garton, A.
see Genovez, A., 660

Gartrell, G.
see Burt, C. M., 627

Gasparini, D. A.
Collapse of Ashtabula Bridge on December 29, 1876, 742

Gates, Timothy K.
Stochastic Design of Hydraulic Structures in Irrigation Canal Networks, 605

Gates, William C. B.
New Wells Safeguard Scenic Tahoe, 1234

Gay, Alan E.
Cost-Effective Solid-Waste Characterization Methodology, 339

Ge, X.
see Ellis, G. W., 327

Genovez, A.
Correction for Settlement of Parshall Flume, 660

Georgiadis, Michael
see Anagnostopoulos, Christos, 424

Ger, J. F.
see Cheng, F. Y., 990

Ger, Jeng-Fuh
Collapse Behavior of Pino Suarez Building During 1985 Mexico City Earthquake, 854
Postbuckling and Hysteresis Models of Open-Web Girders, 853

Gerges, Antoine
see Sen, Rajan, 911

Geselbracht, J. J.
see Kao, J. -J., 356

Ghafoori, Nader, ed.
Innovation in Repair Techniques of Concrete Structures, 1366
Investigation of Phosphate Mining Waste for Construction Materials, 714
Parametrically Induced Vibration in Concrete Columns, 218
Utilization of Industrial By-Products for Construction Materials, 1391

Ghali, Amin
see Sze, Kam-Yim, 950

Gharios, Kelly M.
see Derian, Luther, 1301

Ghobarah, A.
see Korol, R. M., 1002

Ghosh, D. K.
KBES for Design of Steel Structural Elements, 52

Giannotti, Alejandro C.
Project Information Management System—Another Approach, 665

Gibson, G. Edward, Jr.
see Weston, David C., 691

Gifford, Jonathan L., ed.
see McNeil, Sue, ed., 1365

Gilbert, R. I.
see Xin, L. J., 952

Girhammar, Ulf Arne
Composite Beam-Columns with Interlayer Slip—Exact Analysis, 877

Gitman, Gregory M.
see Khudenko, Boris M., 373

Gjevik, B.
see Harbitz, C. B., 573

Gloyna, Earnest F.
see Imai, Akio, 306

Gluck, J.
see Sternik, M., 967

Godoy, Luis A.
On Loads Equivalent to Geometrical Imperfections in Shells, 158

Goel, Rakesh K.
Seismic Code Analysis of Buildings Without Locating Centers of Rigidity, 977

Goh, Anthony T. C.
Behavior of Cantilever Retaining Walls, 479
Municipal Solid-Waste Incinerator Fly Ash for Geotechnical Applications, 425

Goldstein, R. V.
Fracture Mechanics in Modeling of Icebreaking Capability of Ships, 45

Gomez, Luis E.
see Chen, Carl W., 12

Gómez, Manuel
see Rodellar, José, 596

Gómez-Morin Fuentes, Lorenzo, ed.
see Fermán Almada, José Luis, ed., 1335

Gong, Yiming
see Zhang, Yaonian, 408

Gonzalez, Juan-Manuel
see Mailhol, Jean-Claude, 640

Gonzalez-Quevedo, Antonio A.
Comparison of Two Simulation Methodologies in Construction, 116

Gooch, Robert S.
see Rogers, David C., 632

Good, Don
see Sparks, Gordon A., 1046

Goodman, Cary C.
see Biller, Benjamin J., 1201

Goodwin, Robert S. C.
Skills Required of Effective Project Managers, 676

Gopalan, T. V.
New Excitation System for Indoor Testing of Overhead Conductors, 145

Gopu, Vijaya K. A.
see Girhammar, Ulf Arne, 877

Goswami, Indranil
Vortex-Induced Vibration of Circular Cylinders. I: Experimental Data, 283
Vortex-Induced Vibration of Circular Cylinders. II: New Model, 284

Goswami, Sukamal
Effective Management in Computerized SCADA System, 668

Goto, Yoshiaki
Failure Mechanism of New Bond-Type Anchor Bolt Subject to Tension, 871

Gould, James P.
Taming the Urban Underground, 1206

Goulter, I.
Predicting Water-Main Breakage Rates, 1127

Goulter, I. C.
see Jacobs, P., 71
see Sutardi, 1125

Gourevitch, Sergei
see Ferguson, Kendall, 1015

Govindaraju, Rao S.
see Tayfur, Gokmen, 495

Graham, D. P.
see Beke, G. J., 587
see Beke, G. J., 588

Grasso, D.
see Ellis, G. W., 327

Graves, Ray
Total Quality—Does it Work in Engineering Management?, 694

Gray, Donald H.
see Qian, Xuede, 391

Grayman, Walter
see Shea, Conor, 1107

Grayman, Walter M.
see Clark, Robert M., 319
see Horn, C. Robert, 1116

Greenman, James H.
Pin Piles Save Silos, 1276

Grenney, William J.
see Penmetsa, Ravi K., 311

Grierson, Donald E.
see Moharrami, Hamid, 922
see Xu, Lei, 906

Griffin, Ronald C.
Evaluating Locally Financed Reservoir: The Case of Applewhite, 1142

Griffis, F. H. (Bud)
see Reinschmidt, Kenneth F., 14

Griffiths, D. V.
Analysis of Delayed Failure in Sloping Excavations, 455

Griffiths, George A.
Sediment Translation Waves in Braided Gravel-Bed Rivers, 548

Grigg, Neil S.
Drought and Water-Supply Management: Roles and Responsibilities., 1135
Infrastructure and Economic Development: Civil Engineering Perspective, 763
New Paradigm for Coordination in Water Industry, 1138

Grigoriu, Mircea
Simulation of Nonstationary Gaussian Processes by Random Trigonometric Polynomials, 167
see Rahman, Sharif, 912

Grismer, Mark E.
Subsurface Drainage System Design and Drain Water Quality, 619

Grivas, Dimitri A.
see Shen, Yung-Ching, 77

Groneck, Paul B.
see Greenman, James H., 1276

Gu, W. H.
Progressive Failure of Lower San Fernando Dam, 393

Guan, Fei
see Takemiya, Hirokazu, 290

Guertin, D. Phillip
see Risley, John C., 1121

Gugel, John G.
see Russell, Jeffrey S., 129
see Russell, Jeffrey S., 735

Guitjens, J. C.
Alfalfa Irrigation During Drought, 661

Guler, Nil
see Bernold, Leonhard E., 118

Gulliver, John S.
Measurement of Air-Water Oxygen Transfer at Hydraulic Structures, 511
see Murdock, Robert U., 1130

Gunn, Paul
see McCullouch, Bob G., 103

Gunnink, Brett W.
Soil-Fabric Measurement Using Phase Transition Porosimetry, 439

Gupta, Ajaya Kumar
see Min, Chang Shik, 933

Gupta, Ashok
see Reddy, R. Ramesh, 59

Gupta, R. D.
Discharge Prediction in Smooth Trapezoidal Free Overfall, 595

Guralnick, Sidney A.
Automating Inspection of Highway Pavement Surfaces, 1027

Gurbuz, Orhan
see Reed, John W., 140

Guštar, M.
see Marek, P., 896

Gutierrez, E.
Experimental Studies of Loading Rate Effects on Reinforced Concrete Columns, 200

Gutierrez, Oscar R. San Roman
Effect of Wetted Floating Fins on Water-Atmosphere Heat Exchange, 137

Gutwein, Barry J.
Regional Irrigation Water Demand, 644

Guza, R. T.
see Elgar, Steve, 1167
see Liu, Zhenhua, 1155

Ha, H. Kinh
see Jesień, Wojtek, 891

Ha, Kinh H.
Stiffness Matrix for Exact Solution of Sandwich Beam and Frame Systems, 870

Ha, Tam
Optimum Design of Unstiffened Built-Up Girders, 963

Haas, C. T.
see Hornaday, W. C., 111

Haas, Charles N.
Development of Regression Models with Below-Detection Data, 310

Haas, R. C.
see El Halim, A. O. Abd, 1086

Hadala, Paul F.
see Marcuson, William F., Jr., 1308

Hadavi, Ahmad
Short-Term Goal Setting for Construction, 119

Haddad, Sami
see Srinivasan, 1204

Hadian, M. Jafar
see Noor, Ahmed K., 194

Hadipriono, Fabian C.
see Diaz, Carlos F., 83

Haeckel, Dawn K.
see Crocker, Katherine H., 1097

Hagaman, Roberta M.
see Kemeny, John M., 447

Hagen, Øistein
Outcrossing of Stationary Gaussian Process from 2D Elliptical Region, 205

Hager, Willi H.
see Mazumder, Somendra K., 505

Hagerty, D. J.
see Hagerty, M. M., 374

Hagerty, M. M.
One-Dimensional High-Pressure Compression of Granular Media, 374

Hahin, C.
Accurate and Rapid Determination of Fatigue Damage in Steel Bridges, 814

Hahn, Daniel M.
New Way Out, 1191

Haith, Douglas A.
see DelVecchio, Gregory M., 315
see Wu, Ray Shyan, 1145

Hajela, P.
see Soeiro, F. J., 39

Hakuno, Motohiko
Simulation of Concrete-Frame Collapse Due to Dynamic Loading, 250

Halabe, Udaya B.
Leak Detection from Large Storage Tanks Using Seismic Boundary Waves, 407

Halim, Irwan S.
Site Exploration Strategy for Geologic Anomaly Characterization, 385

Hall, James A.
see Wu, Tien H., 606

Hall, Jim W., Jr., ed.
Airport Pavement Innovations—Theory to Practice, 1325

Hall, Kenneth J.
see Wareham, David G., 305

Hall, W. David, ed.
Waterpower '93, 1393

Halpin, Daniel W.
Process-Based Research to Meet the International Challenge, 106
see Gonzalez-Quevedo, Antonio A., 116
see Vanegas, Jorge A., 101

Ham, R. K.
Organic Compounds in Ferrous Foundry Process Waste Leachates, 300

Ham, Robert K.
Chemical Characterization of Fresh Kills Landfill Refuse and Extracts, 370

Hamilton, Dennis O.
Moving an Engineering Firm: A Checklist, 673

Hamilton, Jed M.
see Murff, James D., 379

Hammad, Amin
Bridge Planning Using GIS and Expert System Approach, 66

Hammons, Michael I.
see Smith, Donald M., 724

Han, Kye
Sectional Capacity of Circular Steel Tubes under Combined Loading, 172

Han, Lee D.
see Cassidy, Michael J., 1029

Han, Yingcai
see Vaziri, Hans, 458

Hancock, G. J.
see Rasmussen, K. J. R., 940
see Rasmussen, K. J. R., 941

Hancock, Gregory J.
see Bernard, Erik Stefan, 936

Hand, David W.
see Notthakun, Sawang, 343

Haness, S. J.
see Warwick, J. J., 72

Hansen, Andrew C.
see Schmidt, Richard J., 192

Hansen, Jens Aage
see Christensen, Jimmy Roland, 307

Hansen, Kenneth D.
see McLean, Francis G., 1261

Hansen, Svein Borg
see Dyvik, Rune, 465

Hanson, Adrian T.
Remediation of Chromium-Containing Soils by Heap Leaching: Column Study, 350

Hansteen, Ole E.
see Andersen, Knut H., 466

Harahap, Indra S.
see Finno, Richard J., 13

Harbitz, C. B.
Numerical Simulations of Large Water Waves due to Landslides, 573

Hardy, M. S. A.
Response of Continuous Pavements to Moving Dynamic Loads, 253

Harik, I. E.
see Manzelli, Anibal A., 869

Harik, Issam E.
see Manzelli, Anibal A., 868
see Pei, Jianping, 22

Harned, James A.
see Silverston, Elliot, 1298

Harper, Lee
Airport Towers: A New Generation, 1296

Harries, Kent A.
Seismic Response of Steel Beams Coupling Concrete Walls, 1010

Harrington, R. A.
see Kouwen, N., 1118

Harris, Gregory P.
Field Test Comparison of Calcium Magnesium Acetate to Salt, 1084

Hartley, Gilbert
Analysis of Building Frames, 831

Hartley, Kenneth O.
How to Make Project Schedules Really Work for You, 674

Hartmann, T. W.
see Nowak, P. S., 839

Harwood, Douglas W.
Procedure for Developing Truck Accident and Release Rates for Hazmat Routing, 1040

Hasebe, Norio
Second Mixed-Boundary-Value Problem for Thin-Plate Bending, 160

Hasegawa, Toshiaki
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. I: General Formulation, 722
Nonlocal Microplane Concrete Model with Rate Effect and Load Cycles. II. Application and Verification, 723

Hashash, Youssef M. A.
see Whittle, Andrew J., 378

Hashimoto, Philip S.
Seismic Capacity and Failure Modes of Flat-Bottom Vertical Tanks, 141

Hasnat, Abul
Prestressed Beams with Openings and no Stirrups Under Torsion and Bending, 968

Hastak, Makarand
Time-Based Competition: Competitive Advantage Tool for A/E/C Firms, 130

Hatch, Henry J.
Relevant Engineering in 21st Century, 778

Hatfield, K.
Transport in Porous Media Containing Residual Hydrocarbon. I: Model, 332
Transport in Porous Media Containing Residual Hydrocarbon. II: Experiments, 333

Hathoot, Helmi M.
Analysis and Design of Trickle-Irrigation Laterals, 639

Haury, Richard L.
see Evans, Ginger S., 1236

Hawkins, Richard H.
Asymptotic Determination of Runoff Curve Numbers from Data, 604

Haynie, Fred H.
see Barlaz, Morton A., 348

Hazarvartian, Kim Eric
see Collura, John, 76

Hazen, Glenn A.
see Rauch, Alan F., 400

Heath, Ronald E.
see Johnson, Billy H., 492

Hechler, Jean-Jacques
Corrosion Rates, Wetness, and Pollutants on Exterior of Building, 700

Hedgepeth, J. M.
see Rogers, C. A., 18

Hegazy, Tarek
see Moselhi, Osama, 109

Heger, Frank J.
Public Safety—Is it Compromised by New LRFD Design Standards?, 876

Heidengren, Charles K.
Inside the System: The Japanese Construction Company, 1313

Heinz, Roney
Plastic Piling, 1227

Helweg, Otto J.
Testing and Counseling in Assisting Students in Career Selection, 766

Hendrickson, Chris T., ed.
Pacific Rim TransTech Conference: Volume I: Advance Technologies, 1374

Hensey, Melville
Essential Tools of Total Quality Management, 684

Heredia-Zavoni, Ernesto
see Vanmarcke, Erik H., 287

Hess, Alan F.
see Clark, Robert M., 319

Heyliger, P. R.
Free Vibrations of Laminated Anisotropic Cylindrical Shells, 210

Hiatt, Wright
Hawaii: Growth, Government, and Economy, 1094

Hicks, Jimmie C.
Haul-Unit Performance, 121

Higashino, M.
see Reinhorn, A. M., 917

High Level Radioactive Waste Management Program Committee
High Level Radioactive Waste Management, 1361

Highter, William H.
Bachelor of Civil Technology and Civil Engineering Programs, 768

Hildebrand, Lawrence P., ed.
Coastlines of Canada, 1337

Hillen, Roeland, ed.
Coastlines of the Southern North Sea, 1342

Hills, David J.
see Chang, Wen-Jaur, 589
see Chang, Wen-Jaur, 590

Hilton, Joseph R., Jr.
Fast Foundation for Soft Clay, 1215

Hirano, Tadato
see Takabatake, Hideo, 919
see Takabatake, Hideo, 920

Hirao, Kazutoshi
see Hyde, Adrian F. L., 480

Hite, D. R.
see Hagerty, M. M., 374

Hjelmfelt, Allen T., Jr.
Movement of Ground Water in Converging Aquifer, 602

Ho, Carlton L., ed.
Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation, 1324

Hobeika, A. G.
Real-Time Traffic Diversion Model: A Conceptual Approach, 1062

Hobeika, Antoine G.
Characteristics of Hazardous-Material Accidents in Pennsylvania, 1043
Microcomputer Model for Design and Location of Runway Exits, 1053

Hoffman, S.
see Benson, S. M., 614

Hoisve, Rae A.
Effect of pH on Leaf Decomposition in Low Alkalinity Lakes, 301

Holly, F. M., Jr.
see Clemmens, A. J., 636

Holly, Forrest M., Jr.
Description and Evaluation of Program: CARIMA, 634
Unique Problems in Modeling Irrigation Canals, 629
see Krajewski, Karol L., 135
see Meselhe, Ehab A., 554

Holtz, R. D.
see Sivakugan, N., 436

Hon, Katherine, ed.
Water Management in the '90s: A Time for Innovation, 1392

Hondzo, Midhat
Lake Water Temperature Simulation Model, 570

Hong, G. M.
Elastic Buckling of Circular Plates Allowing for Prebuckling Deformation, 201

Hong, Keh-Luen
see Fang, I-Kuang, 951

Hooper, Richard P.
Managing the Data Explosion, 1237

Hopmans, J. W.
see Childs, J. L., 585

Horn, C. Robert
Water-Quality Modeling with EPA Reach File System, 1116

Hornaday, W. C.
Computer-Aided Planning for Heavy Lifts, 111

Horst, Amy D.
see Pantelides, Chris P., 830

Horvath, John S.
Beam-Column-Analogy Model for Soil-Structure Interaction Analysis, 395

Hosain, M. U.
see Hrabok, M. M., 802

Hoshiya, Masaru
Kalman Filter—Finite Element Method in Identification, 159

Hossain, Q. A.
see Tang, H. T., 142

Hossain, Quazi A., ed.
Dynamic Analysis and Design Considerations for High-Level Nuclear Waste Repositories, 1352

Houston, Sandra L.
Comparison of Rock Correction Methods for Compaction of Clayey Soils, 420
Unsaturated Soils, 1390
see Walsh, Kenneth D., 428

Houston, William N.
see Walsh, Kenneth D., 428

Hover, K. C.
see Natesaiyer, K., 708

Howard, B. Carol
see Back, Sue A., 1307

Howell, Gregory
Interaction Between Subcycles: One Key to Improved Methods, 125

Howell, Gregory A.
see Laufer, Alexander, 107

Hrabok, M. M.
Use of Structural Analysis Programs in Consulting, 802

Hromadka, Theodore V.
see McCuen, Richard H., 657

Hryciw, Roman D.
Stress-History–Based Model for G^e of Cohesionless Soils, 443
see Ho, Carlton L., ed., 1324

Hsieh, Bernard B.
see Johnson, Billy H., 492

Hsieh, Chu-Chin
Estimating Emissions of 20 VOCs. I: Surface Aeration, 365
Estimating Emissions of 20 VOCs. II: Diffused Aeration, 366

Hsieh, P. C.
see Huang, L. H., 243

Hsu, Cheng-Tzu Thomas
see Wang, Wei, 937

Hsu, D. S.
see Yang, Henry T. Y., 857

Hsu, Deh-Shiu
see Yeh, Yi-Cherng, 55

Hsu, Hui-Mi
see Hwang, Howard H. M., 910

Hsuan, Y. G.
Stress-Cracking Resistance of High-Density Polyethylene Geomembranes, 484

Hu, Sau-Lon James
Non-Gaussian Properties of Second-Order Random Waves, 168
Responses of Dynamic Systems Excited by Non-Gaussian Pulse Processes, 257

Huang, Chiung-Shiann
see Wu, Tien H., 381

Huang, Dongzhou
Impact Studies of Multigirder Concrete Bridges, 942

Huang, Joan
Plastic Tripping of Ring Stiffeners, 898

Huang, L. H.
Dynamic Response of Poroelastic Bed to Water Waves, 553
Study on Porous Wave Makers, 243

Huang, Min-Chih
Stream Function Wave Theory with Profile Constraints, 1153

Huang, Scott L.
Slope Failure Analysis Using Local Minimum Factor-of-Safety Approach, 490

Huang, Wen-Cheng
Diagnostic Checking in Stochastic Dynamic Programming, 1131

Huang, Y. P.
see Chan, H. C., 881

Hubbard, Ian
see Martin, G. Dewey, III., 1193

Hudak, Paul F.
Short-Term Solute Fluctuations in Ground Water: Modeling Implications, 541
Water-Table Correction Factors to Applied Gasoline Contamination, 334

Hudson, Ronald W.
Microcomputer Bridge Management System, 1031

Hudson, Stuart W.
see Hudson, Ronald W., 1031

Hudspeth, Robert T., ed.
Civil Engineering in the Oceans V, 1332
see Sulisz, Wojciech, 1177

Hughes, Larry N.
Exchanging Wastes, 1287

Hughes, Steven A., ed.
Coastal Engineering Considerations in Coastal Zone Management, 1333
see Sultan, Nels J., 1172

Hugo, Fred
see O'Connor, James T., 748

Hukkinen, Janne
Institutional Distortion of Drainage Modeling in Arkansas River Basin, 638

Hulme, T. W.
Bored Tunneling for Singapore Metro, 7

Hulsey, J. L.
Cold Region Logistics Planning and Management, 43

Humplick, Frannie
see Ben-Akiva, Moshe, 1030

Hung, Tin-Kan
see Chen, Bang-Fuh, 232

Huria, Vikas
Nonlinear Finite Element Analysis of RC Slab Bridge, 811

Husain, A. S.
see Engelhardt, M. D., 1006

Husein, Abdallah I.
see Liang, Robert Y., 416

Hushmand, Behnam
see Crouse, C. B., 467

Hussain, S. Ehtesham
Influence of Microsilica on Protection from Chloride-Induced Corrosion of Reinforcing Steel, 707

Huston, Dryver R.
see Fuhr, Peter L., 935
see Gardner-Morse, Mack G., 997
see Zhang, Hai-Yan, 261

Hutchinson, Bruce G.
Analyses of Canadian Air Travel Demands, 1048

Hutton, David V.
Dynamic Analysis of Active-Control, Cable-Stayed Guideway, 943

Hwang, Howard H. M.
Seismic LRFD Criteria for RC Moment-Resisting Frame Buildings, 910

Hwang, J. S.
Effective Stiffness and Equivalent Damping of Base-Isolated Bridges, 981

Hyde, Adrian F. L.
Stability Criteria for Marine Clay Under One-Way Cyclic Loading, 480

Ianni, Carlo
see Dezi, Luigino, 890

Ibbs, C. William
see Abu-Hijleh, Samer F., 86

Ibe, A. Chidi, ed.
see Awosika, Larry F., ed., 1343

Imai, Akio
Cr(III) in Activated Sludge, 306

Imberger, Jörg
see Lemckert, Charles J., 531
see Lemckert, Charles J., 532
see Stephens, Rohan, 519

Inaudi, Jose A.
Minimum Variance Control of Base-Isolated Floors, 829

Ioannou, P. G.
Advanced Construction Technology System—ACTS, 98

Ioannou, Photios G.
Average-Bid Method—Competitive Bidding Strategy, 89

Iseley, David T.
see Gonzalez-Quevedo, Antonio A., 116

Isenberg, Jeremy, ed.
Finite Element Analysis of Reinforced Concrete Structures II, 1355

Ishikawa, Nobutaka
see Katsuki, Satoshi, 908
see Katsuki, Satoshi, 909

Ishmael, Kenneth
see Baumgartner, Charles A., 1270

Iskandarani, Mohamed
Mass Transport in Wave Tank, 1152

Islander, Robert L.
Microbial Ecology of Crown Corrosion in Sewers, 15

Ismael, Nabil F.
Laboratory and Field Leaching Tests on Coastal Salt-Bearing Soils, 401
see Al-Sanad, Hasan A., 412

Issa, Mohsen
see Sen, Rajan, 911

Itani, Rafik Y.
see Phillips, Timothy L., 894

Ito, Katsuhiko
see Sonu, Choule J., 1303

Ito, Mitsuru
Minimum-Weight Design of Continuous Composite Girders, 879

Itoh, Yoshito
see Hammad, Amin, 66

Iyengar, Hal
Steel Exoskeleton Defines Architecture, 1260

Iyengar, Leela
see Rao, C. R. Nagendra, 321

Izzuddin, B. A.
Eulerian Formulation for Large-Displacement Analysis of Space Frames, 180

Jacangelo, Joseph G.
see Haas, Charles N., 310

Jacobs, Laurence J.
see Bruttomesso, Douglas A., 285

Jacobs, P.
Water-Distribution GIS from Fragmented and Incomplete Information, 71
see Goulter, I., 1127

Jacobs, Timothy L.
Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 4
see Crump, Eric L., 1091

Jaeger, Leslie G.
see Mufti, Aftab A., 907

Jain, Sajjan K.
see Shah, Dipak D., 133

Jain, Subhash C.
Nonunique Water-Surface Profiles in Open Channels, 579
see Jun, Kyung Soo, 493

James, Wesley P.
Radar-Assisted Real-Time Flood Forecasting, 1103

Jamil, M.
see Gupta, R. D., 595

Jankowski, Piotr
Towards a Modeling Support System for Simulation of Water Quality, 70

Jardine, R. J.
see Lehane, B. M., 375

Jaselskis, Edward J.
see Recarte Suazo, Guillermo Arturo, 115
see Severson, Gordon D., 134

Jawed, Mohammad
see Tare, Vinod, 359

Jayachandran, P.
see Agbayani, N., 1011

Jaynes, Gordon L.
What's In It for Me?, 1310

Jeljeli, Mohamed N.
Potential Applications of Geographic Information Systems to Construction Industry, 85

Jemah, Adel K.
see Williams, Fred W., 927

Jenkins, C. H.
see Broderick, L. L., 1186

Jensen, James N.
see Reed, Brian E., 335

Jesień, Wojtek
Dynamic Along-Wind Response of Buildings: Comparative Study, 891

Jewell, William J.
see Nelson, Yarrow M., 354

Ji, Feng
see Pak, Ronald Y. S., 196

Ji, Sang-wuk
see Meehan, Richard L., 771

Jiang, Da-Hua
see Wang, Wei, 937

Jilani, A.
see Heyliger, P. R., 210

Jin, X.
Quasi-3D Numerical Modeling of Shallow-Water Circulation, 520

Jin, Yee-Chung
Predicting Flow in Curved Open Channels by Depth-Averaged Method, 499

Johns, Derek D.
Riprap Sizing for ARS-Type Low-Drop Stilling Basins, 544

Johnson, Billy H.
Validation of Three-Dimensional Hydrodynamic Model of Chesapeake Bay, 492

Johnson, Gordon S.
see Tobiason, John E., 331

Johnson, James H.
see Highter, William H., 768

Johnson, Kyle D.
Technology in Marine Construction Firms, 90

Johnson, Peggy A.
Merging Laboratory and Field Data in Bridge Scour, 564
see McCuen, Richard H., 657
see McCuen, Richard H., 1353

Johnson, R. C.
see Nixon, W. A., 44

Johnson, William K.
Susceptibility of Reservoirs to Drought Using Palmer Index, 1123

Johnston, A. J.
Round Buoyant Jet Entering Shallow Water in Motion, 575

Johnston, David W.
see Navon, Ronie, 131

Johnston, Robert A.
Automating Urban Freeways: Financial Analysis for User Groups, 1064

Johnston, William R.
Changes in Subsurface Drainage Water Salinity and Boron Concentrations, 594

Jones, J. Sterling
see Johnson, Peggy A., 564

Jones, Nicholas P.
see Cross, W. Bradford, 974
see Cross, W. Bradford, 975
see Ehsan, Fazl, 832
see Ellingwood, Bruce, 1105
see Goswami, Indranil, 283
see Goswami, Indranil, 284

Jones, Norman L.
Subsurface Characterization With Solid Models, 483

Jones, Russel C.
Restructuring the Engineering and Engineering Technology Relationship, 773

Jonsson, Ivar G.
Pressure and Set Down for Higher-Order Stokes Waves on Current, 1175

Jordan, John W., Jr.
see Corven, John A., 1290

Jordan, Jonathan D.
see Shih, Sun F., 646

Joseph, Dennis
All Dressed Up, 1272

Joshi, R. C.
see Wijeweera, H., 48

Jowitt, P. W.
Predicting Pipe Failure Effects in Water Distribution Networks, 1102

Joy, Douglas M.
Stochastic Model of Particulate Transport in Porous Medium, 543

Julien, P. Y.
see O'Brien, J. S., 507
see Stein, O. R., 494

Jun, Kyung Soo
Oxygen Transfer in Bubbly Turbulent Shear Flow, 493

Jurinak, J. J.
Geochemical Factors Affecting Trace Element Mobility, 645

Kabilamany, K.
see Arulanandan, K., 477

Kacerek, Timothy F.
see Rogers, David C., 632

Kacimov, A. R.
Estimation and Optimization of Transient Seepage with Free Surface, 655

Kadavy, Kem C.
see Rice, Charles E., 501

Kaden, Richard A.
Use Value Engineering Concepts for Spaceport Launching, 24

Kadir, Tariq N.
see Angelakis, Andreas N., 615

Kagan, Harvey A.
Common Causes of Collapse of Metal-Plate–Connected Wood Roof Trusses, 752

Kakuno, Shohachi
Scattering of Water Waves by Vertical Cylinders, 1165

Kalyanaraman, V.
see Ghosh, D. K., 52

Kamat, M. P.
see Adeli, Hojjat, 32

Kanafani, Adib
Airline Safety Posture: Evidence from Service-Difficulty Reports, 1070

Kane, William F.
see Drumm, Eric C., 384

Kaneko, Yoshio
Fracture Mechanics Approach for Failure of Concrete Shear Key. I: Theory, 188
Fracture Mechanics Approach for Failure of Concrete Shear Key. II: Verification, 189

Kangari, Roozbeh
see Miyatake, Yasuyoshi, 99

Kanok-Nukulchai, W.
False Paradox of Torsional Buckling, 1013
see Hong, G. M., 201

Kao, J.-J.
Computer-Based Environment for Wastewater Treatment Plant Design, 356

Kapuskar, M.
see Bardet, J. P., 406

Karajeh, F. F.
see Tanji, K. K., 591

Karapetian, E. N.
Elastic Field of Internal Circular Crack Subjected to Linear Shear Loading, 227
see Fabrikant, V. I., 281

Kareem, A.
see Li, Yousun, 153

Kareem, Ahsan
Wind-Excited Surge Response of Tension-Leg Platform: Frequency-Domain Approach, 157
see Li, Yousun, 211

Kashyap, Deepak
see Ahmad, Saleem, 581

Kassoff, Hal
Civil Engineering Evolution, 757

Kato, Masafumi
see Ohura, Takashi, 122

Katsuki, Satoshi
Holonomic Elastoplastic Reliability Analysis of Truss Systems. I: Theory, 908
Holonomic Elastoplastic Reliability Analysis of Truss Systems. II: Applications, 909

Kavazanjian, Edward, Jr.
see Derian, Luther, 1301

Kavvas, M. Levent
see Tayfur, Gokmen, 495

Kawanisi, K.
Measurements of Turbulence and Suspended Sediment in Tidal River, 533

Kawashima, Kazuhiko
Estimation of Damping Ratio of Cable-Stayed Bridges for Seismic Design, 862

Kay, Robert, ed.
Deltas of the World, 1347

Keahey, William Kyle
see Allen, Douglas A., 1264

Keeler, Theodore
see Kanafani, Adib, 1070

Keira, K.
see Sakumoto, Y., 983

Kelley, J.
see Hulsey, J. L., 43

Kelley, Martin N.
Second Roebling Lecture 1991, 80

Kellogg, C. Gary
Vertical Earth Loads on Buried Engineered Works, 403

Kelly, James M.
see Inaudi, Jose A., 829

Kelly, Paul W.
see Navon, Ronie, 131

Kelsey, R. George
Thermomechanical Properties of Epoxy Mortars, 709

Kemeny, John M.
Analysis of Rock Fragmentation Using Ditigal Image Processing, 447

Kemp, Karen K.
see Leipnik, Mark R., 1112

Kempner, Leon, Jr.
see Bathon, Leander, 821

Kennedy, John B.
see Aly, Alaa, 948
see Mohammed, Hesham, 836

Kennedy, John F.
see Ettema, Robert, 803
see Yeh, Keh-Chia, 538
see Yeh, Keh-Chia, 539

Kersten, Robert D.
see Jones, Russel C., 773

Khalvati, M.
see Parfitt, M. K., 126

Khan, Mohammad Shamim
Methods of Motivating for Increased Productivity, 672

Khanna, P.
see Mhaisalkar, V. A., 369

Khennane, A.
Uniaxial Model for Concrete Under Variable Temperature and Stress, 238

Khire, Milind V.
see Lawton, Evert C., 389

Khudenko, Boris M.
Oxygen Based Claus Process for Recovery of Sulfur From H_2S Gases, 373

Khushalani, K. B.
How We Falter and the Lessons We Learn, 804

Kim, Byung J.
see Hobeika, Antoine G., 1053

Kim, Jaekwan
Discrete Wave-Number Boundary-Element Method for 3-D Scattering Problems, 183

Kim, Jong R.
see Drescher, Andrew, 704

Kim, Joongwha
see Paek, James, 664

Kim, Keu W.
see Johnson, Billy H., 492

Kim, Kwang W.
Relation of HP-GPC Profile with Mechanical Properties of AC Mixtures, 727
Use of GPC Chromatograms to Characterize Aged Asphalt Cements, 699

Kim, Moo-Hyun
Interaction of Waves with *N* Vertical Circular Cylinders, 1188

Kim, Sigon
see Hobeika, Antoine G., 1043

Kim, Simon
see East, E. William, 94

Kim, Yeong-Kwan
Mechanisms of Fouling in Fine-Pore Diffuser Aeration, 367

Kinard, Dan T.
see Smith, Alec D., 1219

King, J. Phillip
see Durnford, Deanna, 607

King, Stephanie
see Meehan, Richard L., 771

Kinman, Riley N.
see Rickabaugh, Janet F., 340

Kirpich, Phillip Z.
Holistic Approach to Irrigation Management in Developing Countries, 603

Kish, D. A.
see Davalos, J. F., 901

Kishnani, Sunil S.
Seepage and Soil-Structure Interaction Effects in Braced Excavations, 431

Kitipornchai, S.
Eccentrically Connected Cleat Plates in Compression, 849
see Wang, C. M., 171
see Wang, C. M., 850
see Xiang, Y., 148
see Xiang, Y., 242

Kitipornchai, Sritawat
see Chin, Chee-Kiong, 864

Klaiber, F. W.
see Planck, S. M., 861

Klammer, P.
see Oumeraci, H., 1169

Klee, Albert J.
New Approaches to Estimation of Solid-Waste Quantity and Composition, 312

Knight, G. M. S.
Joint Effects on Behavior of Transmission Towers, 845

Knocke, W. R.
see Coffey, B. M., 342

Kobayashi, H.
see Bienkiewicz, B., 824

Kobayashi, Nobuhisa
Wave Attenuation by Vegetation, 1149
see Wurjanto, Andojo, 1178

Kobayashi, Youichi
see Goto, Yoshiaki, 871

Kodikara, Jayantha K.
Axial Response of Tapered Piles in Cohesive Frictional Ground, 415

Koehn, Enno
Career-Guidance Programs: Needs and Activities of ASCE Sections/Branches, 764
Infrastructure Construction: Effect of Social and Environmental Regulations, 790

Koerner, R. M.
see Hsuan, Y. G., 484

Kofoed-Hansen, Henrik
see Jonsson, Ivar G., 1175

Koh, C. G.
see Liaw, C. Y., 240

Kohne, Roger W.
see Johnson, William K., 1123

Kok, Johan J.
see Schwarz, Charles R., 1023

Koluvek, Paul K.
Overview of Soil Erosion From Irrigation, 649

König, Gert
Method to Solve Bond Differential-Equation System in Prestressed Concrete, 278

Konrad, J.-M.
Undrained Cyclic Loading of Anisotropically Consolidated Clayey Silts, 432

Koo, T. K.
see Aw, Y. B., 1017

Korol, R. M.
Blind Bolting W-Shape Beams to HSS Columns, 1002

Kosmatka, J. B.
Review of Methods for Analyzing Constrained-Layer Damped Structures, 33

Kos'yan, Ruben, ed.
Coastlines of the Black Sea, 1339

Kotzias, Panaghiotis C.
Field Quality Control on Earthdam: Statistical Graphics for Gauging, 434

Kountouris, Panayotis J.
see Kotzias, Panaghiotis C., 434

Koushki, P. A.
see Hulsey, J. L., 43

Koushki, Parviz A.
Urban Traffic Noise in Riyadh, Saudi Arabia: Perceptions and Attitudes, 1077

Koutsopoulos, H. N.
Primitive-Based Classification of Pavement Cracking Images, 1054

Koutsopoulos, Haris N.
Analysis of Segmentation Algorithms for Pavement Distress Images, 1083

Kouwen, N.
Grouped Response Units for Distributed Hydrologic Modeling, 1118

Kouwen, Nicholas
see Joy, Douglas M., 543

Kovari, Kalman
see Anagnostou, Georgios, 398

Krajewski, Karol L.
Real-Time Optimal Stochastic Control of Power Plant River Heating, 135

Krajewski, Witold F.
see Krajewski, Karol L., 135

Krakiwsky, E. J.
see McLellan, J. F., 1019

Kramer, Steven L.
see Crouse, C. B., 467

Kranenburg, C.
Gravity-Current Fronts Advancing into Horizontal Ambient Flow, 513
see Jin, X., 520

Kraus, Nicholas C., ed.
see Stauble, Donald K., ed., 1329

Krenk, S.
Finite Step Updating Method for Elasto-Plastic Analysis of Frames, 295

Krenk, Steen
see Zembaty, Zbigniew, 293

Kriebel, David L.
Convolution Method for Time-Dependent Beach-Profile Response, 1159

Krinitzsky, Ellis L.
The Hazard In Using Probabilistic Seismic Hazard Analysis, 1294

Krisher, Trudy
see Saliba, Joseph E., 765

Krishnappan, Bommanna Gounder
Rotating Circular Flume, 536

Křístek, Vladimír
Stress Distribution in Front Columns of High-Rise Buildings, 889

Krizek, Raymond J.
see Hadavi, Ahmad, 119

Krysl, Petr
Complete Stiffness Matrices for Buckling Analysis of Frames, 161

Kuang, Shanlong
Optimization of Horizontal Direction Observations in Triangulation or Triangulateration Networks, 1026
Second-Order Design: Shooting for Maximum Reliability, 1021

Kub, Edward G., II.
Cracking in Exterior Insulation and Finish Systems, 737

Kucner, Lauren K.
Professional Ethics Training for Engineering Firms, 775

Kuczera, George
Network Linear Programming Codes for Water-Supply Headworks Modeling, 1126

Kuhl, Mark
see Ferguson, Kendall, 1015

Kuhn, Matthew R.
New Perspectives on Soil Creep, 404

Kuhnle, Roger A.
Incipient Motion of Sand-Gravel Sediment Mixtures, 577

Kulendran, S.
see Dagher, H. J., 823

Kulhawy, Fred H.
see Chen, Yit-Jin, 478

Kulkarni, Girish
see Adeli, Hojjat, 32

Kulkarni, Ram B.
Decision Analysis of Alternative Highway Alignments, 1049

Kuller, Robert G.
see Lyons, William C., 799

Kumar, Ashok
Section 15 Patronage Reporting for Barrier-Free Transit Service, 1050

Kumbhojkar, A. S.
Numerical Evaluation of Terzaghi's N_γ, 410

Kuo, Chin Y., ed.
Engineering Hydrology, 1354

Kuo, Shyh-Rong
Nonlinear Analysis of Space Frames with Finite Rotations, 806

Kuo, Yau-Hwaug
see Yeh, Yi-Cherng, 55

Kushner, Mark J.
see Chang, Moo Been, 324

Kwan, A. K. H.
Improved Wide-Column-Frame Analogy for Shear/Core Wall Analysis, 828
Mixed Finite Element Method for Analysis of Coupled Shear/Core Walls, 884

Kyriakides, S.
Propagating Instabilities in Long Shallow Panels, 181

La Mendola, Lidia
Stability of Masonry Piers under Their Own Weight and Eccentric Load, 902

Labadie, John W.
see Meyer, Steffen P., 1113

LaBoube, R. A.
Behavior of Arc Spot Weld Connections in Tension, 930
Simplified Strength Prediction for Cold-Formed C- and Z-Shapes, 905

Lachapelle, G.
see Cannon, M. E., 1025

Lade, Poul V.
Stability of Granular Materials in Postpeak Softening Regime, 155

Lagace, Paul A.
see Saeger, Kevin J., 40

Lai, Kum-Yew
see Soh, Chee-Kiong, 60

Laine, Daren L.
Detecting Leaks in Geomembranes, 1262

Lam, Diem H.
see Williams, Fred W., 927

Lampietti, François
see Ramrath, Thomas J., 1304

Lang, Robert J.
see Gutwein, Barry J., 644

Lansey, Kevin E.
Optimal Risk-Based Inspection and Dredging Scheduling for Independent Dredge Reaches, 1164

Larish, John J.
Imaging the Future, 1306

Larralde, J.
Bond and Slip of FRP Rebars in Concrete, 698

Larsson, Ragnar
see Runesson, Kenneth, 186

Laska, Shirley, ed.
Coastlines of the Gulf of Mexico, 1340

Lassarre, Sylvain
Computer-Assisted Routing of Dangerous Goods for Haute-Normandie, 1041

Lassen, Tom
Optimum Design of Three-Dimensional Framework Structures, 846

Laufer, Alexander
Prebid and Preconstruction Planning Process, 107
see Howell, Gregory, 125

Launen, Kari J.
GPS—Rapid Solutions for Transportation Management, 1016

Law, Kincho H.
see Yabuki, Nobuyoshi, 63

Lawrence, Stacey L.
see Norville, H. Scott, 856

Lawton, Evert C.
Reinforcement of Soils by Multioriented Geosynthetic Inclusions, 389

Lay, Garry
see Miyake, T. Ted, 1282

Lay, K. S.
Shell Finite Element Formulated on Shell Middle Surface, 266

Lay, Khai Seong
Seismic Coupled Modeling of Axisymmetric Tanks Containing Liquid, 252

Lea, Reid
Energy Cost Savings Associated with Municipal Solid Waste Recycling, 371

Leblond, André
see Cardou, Alain, 136

Leca, Eric
see Clough, G. Wayne, 472

Ledbetter, Richard H.
see Marcuson, William F., Jr., 1308

Leduc, Roland
Minimization of Multistage RBC Active Disc Area, 314

Lee, C. Y.
Cyclic Response of Axially Loaded Pile Groups, 457
Pile Group Settlement Analysis by Hybrid Layer Approach, 437
Pile Groups under Negative Skin Friction, 469
Settlement of Pile Groups—Practical Approach, 460

Lee, Edwin W.
Treatment, Reuse, and Disposal of Drain Waters, 616

Lee, G. C.
see Elkordy, M. F., 58
see Yang, Rihul, 244

Lee, H. H.
see Tsai, C. S., 874

Lee, Hong-Yuan
Migration of Rectangular Mining Pit Composed of Uniform Sediments, 496

Lee, I. K.
see Chu, J., 429

Lee, K. Y.
see Reddi, Lakshmi, 346

Lee, Kuo-Liang
see Huria, Vikas, 811

Lee, Seung W.
Waste Products as Highway Materials in Flexible Pavement System, 1056

Lee, V. W.
Scaling PSV from Earthquake Magnitude, Local Soil, and Geologic Depth of Sediments, 380

Lee, Yong W.
see Pack, James H., 127

Leger, Pierre
see Ricles, James M., 932

Lehane, B. M.
Mechanisms of Shaft Friction in Sand from Instrumented Pile Tests, 375

Leipnik, Mark R.
Implementation of GIS for Water Resources Planning and Management, 1112

Lemckert, Charles J.
Axisymmetric Intrusive Gravity Currents in Linearly Stratified Fluids, 531
Energetic Bubble Plumes in Arbitrary Stratification, 532

Lennox, William C.
see Joy, Douglas M., 543

Lenz, Janet
see Chertow, Mark, 759

Lepofsky, Mark
Transportation Hazard Analysis in Integrated GIS Environment, 1044

Leu, Sou-Sen
see Ioannou, Photios G., 89

Leung, Christopher K.
see Kaneko, Yoshio, 188
see Kaneko, Yoshio, 189

Levitt, Raymond E.
see Winstanley, Graham, 62

Li, C. O.
see Griffiths, D. V., 455

Li, C. Q.
Outcrossings from Convex Polyhedrons for Nonstationary Gaussian Processes, 288

Li, Chun-Ching
Optimal Discretization of Random Fields, 215

Li, K. S.
see Zoppou, C., 572

Li, Ming
see Drucker, Daniel C., 219

Li, Q. C.
see Lin, Y. K., 154

Li, Yousun
Multivariate Hermite Expansion of Hydrodynamic Drag Loads on Tension Leg Platforms, 153
Simulation of Multivariate Random Processes: Hybrid DFT and Digital Filtering Approach, 211
see Kareem, Ahsan, 157

Liang, Robert Y.
Simplified Dynamic Method for Pile-Driving Control, 416
Wave Equation Parameters from Driven-Rod Test, 440

Liaw, C. Y.
Dynamic Stability and Chaos of System with Piecewise Linear Stiffness, 240

Liaw, D. G.
see Yang, Henry T. Y., 857

Licht, Louis A.
see Nair, Dhileepan R., 351

Lichtenstein, Abba G.
The Silver Bridge Collapse Recounted, 754

Lichty, Craig W.
MSA for VOC Removal, 1216

Lieberman, Richard D.
The 'Criminalization' of Government Procurement, 1217

Liebman, Jon C.
see Park, Heekyung, 1106

Liew, J. Y. Richard
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part I, 987
Second-Order Refined Plastic-Hinge Analysis for Frame Design: Part II, 988

Liew, K. M.
see Wang, C. M., 171
see Wang, C. M., 850
see Wang, C. M., 999
see Xiang, Y., 148
see Xiang, Y., 242

Liggett, J. A.
Critical Depth, Velocity Profiles, and Averaging, 610

Liguore, S. L.
see Kosmatka, J. B., 33

Lim, Kee S.
see Zwerneman, Farrel J., 751

Lin, A. N.
see Shenton, H. W., III., 972

Lin, C. C.
see Chung, L. L., 276

Lin, D. -Y. M.
see Sharit, J., 51

Lin, Gwo-Fong
see Chiu, Chao-Lin, 535

Lin, R. C.
see Reinhorn, A. M., 917

Lin, Y. K.
New Stochastic Theory for Bridge Stability in Turbulent Flow, 154
see Dimentberg, M. F., 156

Linkenheld, J. S.
Knowledge-Based System for Design of Signalized Intersections, 2

Lipscombe, P. R.
Free Rocking of Prismatic Blocks, 231

Litvin, DAvid M., ed.
see Chow, John, ed., 1372

Liu, Chun
see Zhang, Yaonian, 408

Liu, Kuo-Gin
see Liu, Pei-Ling, 187

Liu, L. Y.
see Ioannou, P. G., 98

Liu, Maria Chuan
see Bishara, Alfred G., 827

Liu, P. C.
see Pan, L. B., 934

Liu, Pei-Ling
Selection of Random Field Mesh in Finite Element Reliability Analysis, 187

Liu, Philip L.-F.
see Iskandarani, Mohamed, 1152
see Kakuno, Shohachi, 1165

Liu, Zhenhua
Groups of Ocean Waves: Linear Theory, Approximations to Linear Theory, and Observations, 1155

Lo, Ron
see Findler, Nicholas V., 1072
see Findler, Nicholas V., 1073

Lo, S-C. R.
see Chu, J., 429

Loaiciga, Hugo A.
see Hudak, Paul F., 334
see Leipnik, Mark R., 1112

Logan, Bruce E.
Oxygen Transfer in Trickling Filters, 364

Logan, Roger W.
see Wekezer, Jerzy W., 1067

Loganathan, N.
Deformation Analysis of Embankments, 448

Logcher, Robert D.
see Gantes, Charis, 175

Loh, J. T.
see Duan, L., 852

Lohani, V. K.
Application of SHE for Irrigation-Command-Area Studies in India, 582

Long, Charles E.
Evaluation of von Karman's Constant from Integral Flow Parameters, 565

Long, Jennifer L.
Anaerobic and Aerobic Treatment of Chlorinated Aliphatic Compounds, 316

Long, Xiqin
see Nielsen, Richard J., 843
see Nielsen, Richard J., 945

Lopes, Vicente L.
Computation of Flow Transitions in Open-Channels with Steady Uniform Lateral Inflow, 593

Lord, A. E., Jr.
see Hsuan, Y. G., 484

Lorena, M.
see Ervine, D. A., 576

Losada, Iñigo J.
Water Waves on Crown Breakwaters, 1168

Losada, Miguel A.
see del Valle, Ricardo, 1180
see Losada, Iñigo J., 1168

Løset, Sveinung
Proportional Strain Tests of Fresh-Water Ice Rubble, 46

Lotz, G.
see Cempel, C., 955

Loudon, William
Predicting Pollution, 1228

Lounis, Z.
Multiobjective Optimization of Prestressed Concrete Structures, 851
see Cohn, M. Z., 1007

Low, K. H.
Comparative Study of Frequencies for Plates Carrying Mass, 202

Lowe, Mendi C.
Is It Ethical to Profit from a Natural or Man-made Disaster?, 1199

Lowrey, Bruce
see Schall, James D., 1092

Lu, F.
Strain Hardening Beams Under Shear, Bending, and Axial Forces, 277

Lu, G.
see Cannon, M. E., 1025

Lu, Jyh-Ming
see Chiu, Chao-Lin, 535

Lu, Le-Wu
see Ger, Jeng-Fuh, 854

Lu, Q.
see Dagher, H. J., 823

Lund, Lanny J.
see Chen, Carl W., 12

Lung, Wu-Seng
Eutrophication Analysis of Embayments in Prince William Sound, Alaska, 349

Lyn, D. A.
Turbulence Measurements in Open-Channel Flows over Artificial Bed Forms, 510

Lyons, William C.
Engineering Education for Competitive International Economy, 799

Lyons, William T.
Ups and Downs in Chicago, 1302

Ma, Guidung
see Zhang, Yaonian, 408

Ma, Lun
Pressures Exerted on Soil Due to Rocking of Liquid Storage Tanks, 475

Maamouri, M.
see Dagher, H. J., 823

Madanat, Samer
see Ben-Akiva, Moshe, 1030

Madda, Joseph M.
see Harper, Lee, 1296

Madramootoo, C. A.
Agronomic and Environmental Benefits of Water-Table Management, 658

Maeno, Hirofumi
see Goto, Yoshiaki, 871

Maeso, Orlando
Earthquake Analysis of Arch Dams. I: Dam-Foundation Interaction, 177
see Domínguez, José, 178

Magallanez, Henry
see Samani, Zohrab, 592

Magdi, Mohareb
see Vallabhan, C. V. Girija, 895

Magonette, G.
see Gutierrez, E., 200

Magoon, Orville T., ed.
Coastal Zone '93, 1336

Maher, M. H.
Properties of Flowable High-Volume Fly Ash–Cement Composite, 711

Maidment, David R.
see Djokic, Dean, 1114
see Evans, Thomas A., 69
see McKinney, Daene C., 1111
see Shaw, Douglas T., 1087

Mailhol, Jean-Claude
Furrow Irrigation Model for Real-Time Applications on Cracking Soils, 640

Maisner, Michael P.
see Ponce, Victor M., 537

Makris, Nicos
Analytical Model of Viscoelastic Fluid Dampers, 993
Dynamic Analysis of Generalized Viscoelastic Fluids, 247
Models of Viscoelasticity with Complex-Order Derivatives, 234

Malcolm, D. J.
Structural Response of 34-m Darrieus Rotor to Turbulent Winds, 19

Males, Richard M.
see Clark, Robert M., 319
see Shea, Conor, 1107

Malla, Ramesh B.
Structural and Orbital Conditions on Response of Large Space Structures, 23

Mallon, J. C.
Quality Function Deployment—System for Meeting Customers' Needs, 112

Maloney, Stephen W.
see Sorial, George A., 362
see Sorial, George A., 363

Maloney, William F.
Employee Involvement in Engineering and Construction, 675
Practical Models for Organizational Assessment, 666

Malvar, L. Javier
see Warren, George, 939

Manning, D. G.
see Campbell, T. I., 985

Manrique, Miguel A.
see Czarnecki, R. Martin, 144

Mansfeld, Florian
see Islander, Robert L., 15

Manzanarez, Rafael
Driving Under a Construction Site, 1224

Manzelli, Anibal A.
Approximate Moment-Curvature Relationships for Slender Columns, 868
Prismatic and Nonprismatic Slender Columns and Bridge Piers, 869

Mar, Brian W.
see Gay, Alan E., 339

Marcuson, William F., Jr.
Seismic Remediation for Earth Dams, 1308

Marek, P.
Monte Carlo Simulation—Tool for Better Understanding of LRFD, 896

Marsh, M. Lee
see Coffman, Harvey L., 899

Martell, H. E.
see Teskey, W. F., 1018

Martin, Ernest H.
Importance of Teaching Construction Contract Specifications, 772

Martin, G. Dewey, III.
Concrete over the Connecticut, 1193

Martin, James L.
see Lung, Wu-Seng, 349

Martínez, Fernando
see Pérez, Rafael, 503

Martínez-Díaz de León, Asdrúbal
see Torres-Navarrete, Carlos R., 1182

Martusewicz, Janusz
Optimal Location of Extra Gyroscopic Azimuth in Underground Traverses, 1024

Maser, Kenneth R.
see Halabe, Udaya B., 407

Masih, Rusk
Structural Stiffness Influence on Soil Consolidation, 383

Masonry Standards Joint Committee
Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92); Commentary on Building Code Requirements for Masonry Structures (ACI 530-92/ASCE 5-92/TMS 402-92); Commentary on Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1330
Specifications for Masonry Structures (ACI 530.1-92/ASCE 6-92/TMS 602-92), 1383

Masood, Tahir
Estimation of In-Situ Lateral Stresses in Soils by Cone Penetration Test, 471

Massicotte, B.
see Filiatrault, A., 887
see Filiatrault, A., 888

Matasović, Neven
Cyclic Characterization of Liquefiable Sands, 482

Mathur, B. S.
see Ahmad, Saleem, 581

Mathur, Shashi
see Corapcioglu, M. Yavuz, 241

Matlock, H.
see Desai, C. S., 418

Matsuishi, M.
see Nixon, W. A., 44

Matsumoto, Mark R.
see Reed, Brian E., 318
see Reed, Brian E., 335

Matthews, Gregory P.
see Nocera, John J., 1212

Matthews, James M.
Investigation of Laboratory Fatigue Testing Procedures for Asphalt Aggregate-Mixtures, 1069

Mau, S. T.
see Han, Kye, 172

Mavinic, Donald S.
see Wareham, David G., 305

May, Adolf D.
see Wang, Mu-Han, 1052

Mazumder, Bijoy S.
Turbulence in Rivers due to Navigation Traffic, 525

Mazumder, Somendra K.
Supercritical Expansion Flow in Rouse Modified and Reversed Transitions, 505

McCabe, Raymond
Closing the Loop, 1259

McCahill, Dennis F.
Resource-Oriented Modeling and Simulation in Construction, 117

McCallen, David B.
see Chajes, Michael J., 834

McCambridge, James A.
Designing Executive-Development Programs for Engineering Managers, 678

McCarter, W. J.
Influence of Surface Finish on Sorptivity on Concrete, 705

McCollough, Thomas J.
see Erickson, Bradley P., 1223

McConnel, R. E.
see El-Sheikh, A. I., 848

McCormick, Michael E.
Equilibrium Shoreline Response to Breakwaters, 1187

McCornick, Peter G.
Water Management in Arranged-Demand Canal, 598

McCoy, Richard P.
see Aitken, Michael D., 353

McCrary, Steven W.
Adult-Development Perspective for Managing Professionals, 680
Decision-Support Tools for Transferring AM/FM/GIS to Small Communities, 1099

McCuen, Richard H.
Admission Requirements for Non–Civil Engineering Graduate Applicants, 774
Dynamic Communication for Engineers, 1353
Regionalized Partial-Duration Balanced-Hydrograph Model, 657

McCullouch, Bob G.
Construction Field Data Acquisition with Pen-Based Computers, 103

McCutcheon, S. C.
see Wang, P. F., 563

McCutcheon, Steve C.
see Lung, Wu-Seng, 349

McDonald, Susan
Tying Up The Artery, 1295

McEnroe, Bruce M.
Maximum Saturated Depth Over Landfill Liner, 313

McGhee, Terence J.
see Robinson, David I., 653

McGreight, Patrick
London Linkage, 1258

McKinney, Daene C.
Expert Geographic Information System for Texas Water Planning, 1111

McLain, Thomas E.
LRFD for Engineered Wood Structures—Connection Behavioral Equations, 976

McLay, David S.
see Speitel, Gerald E., Jr., 341

McLean, David I.
see Phillips, Timothy L., 894

McLean, Francis G.
RCC: Rehab Results, 1261

McLellan, J. F.
Application of GPS Positioning to Management of Mobile Operation, 1019

McMahon, Thomas A.
see Vogel, Richard M., 1122

McMullin, Kurt M.
see Astaneh-Asl, Abolhassan, 944

McNeil, Sue, ed.
Infrastructure: Planning and Management, 1365
see Sabina, Erik, 1098

McNeilan, Thomas W.
Probing the Port of Los Angeles, 1196

McPhail, Alexander
Overlooked Market for Water Connections in Rabat's Shantytowns, 1124

Meamarian, Nasser
see Nanni, Antonio, 706

Medina, Raúl
see del Valle, Ricardo, 1180

Meegoda, Namunu J.
Short-Term and Long-Term Permeabilities of Contaminated Clays, 345

Meehan, Richard L.
Contemporary Model of Civil Engineering Failures, 771

Meek, Jethro W.
Approximate Green's Function for Surface Foundations, 464

Meguro, Kimiro
see Hakuno, Motohiko, 250

Meiorin, L.
see Bogle, G. V., 1148

Melaaen, Morten C.
see Olsen, Nils R. B., 556

Melchers, R. E.
see Li, C. Q., 288

Mendes, Pedro A.
see Branco, Fernando A., 938

Menditto, Giovanni
see Dezi, Luigino, 162

Mendoza, Cesar
see Zhou, Donghuo, 169

Menon, Harikumar
see Lansey, Kevin E., 1164

Merkley, G. P.
Description and Evaluation of Program CANAL, 635

Merkley, Gary P.
see Adkins, Dan F., 716
see Holly, Forrest M., Jr., 629
see Rogers, David C., 633

Merklin, William
see Thomann, Robert V., 325

Mertz, G. E.
see Cheng, F. Y., 990

Meselhe, Ehab A.
Simulation of Unsteady Flow in Irrigation Canals with Dry Bed, 554

Mesri, G.
Cohesion Intercept in Effective Stress-Stability Analysis, 450

Messana, Salvatore J.
Transient Scattering from Submerged Cylindrical Shell with Appendages, 233

Meyer, H. W. Guy
see Jeljeli, Mohamed N., 85

Meyer, Steffen P.
Geographic Information Systems in Urban Stormwater Management, 1113

Mhaisalkar, V. A.
Dynamic Programming Optimization of Water-Treatment-Plant Design, 369

Michalopoulos, Panos
see Zografos, Kostas G., 1063

Michalowski, Radoslaw L.
Bearing Capacity of Nonhomogeneous Clay Layers under Embankments., 473

Michel, Henry
Can the U.S. Compete?, 1315

Millar, Robert G.
Effect of Bank Stability on Geometry of Gravel Rivers, 574

Miller, Cass T.
see DiGiano, Francis A., 302

Miller, Richard L.
see Coopersmith, Randi F., 1095

Miller, Thomas H.
Behavior of Cold-Formed Steel Wall Stud Assemblies, 841

Min, Chang Shik
Inelastic Behavior of Hyperbolic Cooling Tower, 933

Minor, J. E.
see Behr, R. A., 817

Minor, Joseph E.
see Pantelides, Chris P., 830

Miranda, Eduardo
Evaluation of Site-Dependent Inelastic Seismic Design Spectra, 880
Site-Dependent Strength-Reduction Factors, 1004

Mirmiran, Amir
Buckling and Postbuckling of Prestressed Sandwich Arches, 820
Inelastic Buckling of Prestressed Sandwich or Homogeneous Arches, 960
Stability of Prebuckled Sandwich Elastica Arches: Parametric Study, 193

Mitchell, Denis
see Harries, Kent A., 1010

Mitchell, James K.
see Kuhn, Matthew R., 404
see Masood, Tahir, 471

Mitchell, Robert
see Crouse, C. B., 467

Mitroka, James T.
see Everett, John G., 788

Mittal, Atul K.
Sorption and Desorption of Dyes by Sulfonated Coal, 320

Miwa, Masahiro
see Hasebe, Norio, 160

Miyake, T. Ted
A Better Grade Of Grade, 1282

Miyatake, Yasuyoshi
Experiencing Computer Integrated Construction, 99

Mizumura, Kazumasa
Meandering Water Rivulet, 567
see Crissman, Randy D., 569

Mohamed, El Hussein H.
Debonding Location in Asphalt Concrete Associated with Moisture Damage, 730

Mohamed, Salah E.
Stability and Strength of Rigid and Semirigid Plane Frameworks, 28

Mohammad, Fawzi S.
see Hathoot, Helmi M., 639

Mohammadi, J.
see Hahin, C., 814

Mohammed, Hesham
Response of Long-Span Soil-Metal Structures, 836

Mohammed, Walid
see Bender, Michael J., 1134

Moharrami, Hamid
Computer-Automated Design of Reinforced Concrete Frameworks, 922

Mohle, R. Henry
see Murthy, A. S. Narasimha, 1388

Mohsin, M.
see Gupta, R. D., 595

Mohsini, R. A.
Knowledge-Based Design of Project-Procurement Process, 57

Mojtahedi, Soheil
see Fenves, Gregory L., 8

Mokha, A. S.
Verification of Friction Model of Teflon Bearings under Triaxial Load, 819

Monismith, Carl L.
see Matthews, James M., 1069

Monley, Gregory J.
Tensile Reinforcement Effects on Bridge-Approach Settlement, 419

Moorcroft, James A.
Pittsburgh Goes International, 1190

Moore, Ian D.
see Kodikara, Jayantha K., 415

Morad, Ayman A.
see Beliveau, Yvan J., 92

Morassi, Antonino
Crack-Induced Changes in Eigenparameters of Beam Structures, 255

Morgan, D. Rusty, ed.
see Wood, David F., ed., 1382

Morgenstern, N.
see Rajani, B., 459

Morgenstern, N. R.
see Gu, W. H., 393

Mori, Yasuhiro
Reliability-Based Service-Life Assessment of Aging Concrete Structures, 897

Morris, Nicholas F.
Effect of Member Snap on Space Truss Collapse, 199

Morrow, Christopher J.
see Coopersmith, Randi F., 1095

Moselhi, Osama
DBID: Analogy-Based DSS for Bidding in Construction, 109
Scheduling of Repetitive Projects with Cost Optimization, 123
see Alkass, Sabah, 108

Moser, Len O.
see Hudson, Ronald W., 1031

Moses, Fred
see Fu, Gongkang, 217

Mourad, S.
see Korol, R. M., 1002

Moussavi, Massoum
Compressed Natural Gas and Liquefied Petroleum Gas as Alternative Fuels, 146

Mueller, Wendelin H., III.
see Bathon, Leander, 821

Mufti, Aftab A.
Moments in Deck Slabs Due to Cantilever Loads, 907

Mukai, Hisao
see Takabatake, Hideo, 919
see Takabatake, Hideo, 920

Muller, Jean M.
Bridge to the Future, 1189

Mullick, A. K.
Assessment of Concrete Construction Projects in India—Multidisciplinary Approach, 740

Mulligan, D. E.
see Mallon, J. C., 112

Mullins, Michael E.
see Notthakun, Sawang, 343

Munns, A. K.
Classification of Maintenance Costs in Scottish Housing Associations, 750

Muraleetharan, K. K.
see Arulanandan, K., 477

Murdock, Robert U.
Prediction of River Discharge at Ungaged Sites with Analysis of Uncertainty, 1130

Murff, James D.
P-Ultimate for Undrained Analysis of Laterally Loaded Piles, 379

Murray, Alan T.
see Church, Richard L., 1089

Murray, D. W.
see Yao, Budan, 964

Murray, N. R.
see Kitipornchai, S., 849

Murtaza, Mirza B.
Knowledge-Based Approach to Modular Construction Decision Support, 88

Murthy, A. S. Narasimha
Transportation Engineering Basics, 1388

Murugappan, K.
Failure Envelope for Steel-Fiber Concrete Under Biaxial Compression, 726

Naaman, A. E.
see Alkhairi, F. M., 957

Nagao, Yoshimi, ed.
Coastlines of Japan II, 1338

Nagaraj, T. S.
see Pandian, N. S., 426
see Pandian, N. S., 427

Nagarajaiah, Satish
Control of Sliding-Isolated Bridge with Absolute Acceleration Feedback, 286
Torsion in Base-Isolated Structures with Elastomeric Isolation Systems, 971
Torsional Coupling in Sliding Base-Isolated Structures, 813

Naghavi, Babak
Development of 24-Hour Rainfall Frequency Maps for Louisiana, 659

Nair, Dhileepan R.
Mineralization and Uptake of Triazine Pesticide in Soil-Plant Systems, 351

Najjar, Yacoub
Surface Subsidence Prediction by Nonlinear Finite-Element Analysis, 481

Najmi, A.
Uniaxial Bending of Columns, 873

Nakagawa, Hiroji
see Naot, Dan, 515
see Naot, Dan, 578
see Nezu, Iehisa, 526

Nakamura, Takuji
see Hasebe, Norio, 160

Nakamura, Tsuneyoshi
Stiffness Design of 3-D Shear Buildings for Specified Seismic Drifts, 809

Nakamura, Yutaka
see Nakamura, Tsuneyoshi, 809

Nanni, Antonio
Flexural Behavior and Design of RC Members Using FRP Reinforcement, 995
Laboratory Consolidation Methods Applied to Compacted Concrete for Pavements, 706

Nanthikesan, S.
see Sunder, S. Shyam, 268

Naot, Dan
Calculation of Compound-Open-Channel Flow, 578
Hydrodynamic Behavior of Compound Rectangular Open Channels, 515

Nap, Eelco
see Van Rijn, Leo C., 1154

Nassif, Hani
see Nowak, Andrzej S., 1082

Natesaiyer, K.
Protected Paste Volume of Air-Entrained Cement Paste. Part II, 708

Nathanail, Teti
see Zografos, Kostas G., 1063

Navaee, S.
Possible Ranges of End Slope for Cantilever Beams, 185

Navalurkar, Rajendra K.
see Ansari, Farhad, 209

Navarrete, George
Computer Scheduling and Construction Specs, 1254

Navon, R.
see Warszawski, A., 9

Navon, Ronie
Human Factors in Introducing On-Site Construction Automation, 131

Nazarian, Soheil
Automated Surface Wave Method: Field Testing, 444
see Yuan, Deren, 445

Neary, Vincent S.
Three-Dimensional Flow Structure at Open-Channel Diversions, 568

Needham, Scott
see Vieux, Baxter E., 1109

Neibling, W. H.
see Trout, Thomas J., 650

Nelson, Christopher H.
A Natural Cleanup, 1213

Nelson, Priscilla P., ed.
Design and Performance of Deep Foundations: Piles and Piers in Soil and Soft Rock, 1349

Nelson, Richard J.
see Harris, Gregory P., 1084

Nelson, Yarrow M.
Vinyl Chloride Biodegradation with Methanotrophic Attached Films, 354

Neudorf, Russell D.
see Sparks, Gordon A., 1046

Neumann, Edward S., ed.
see Sproule, William J., ed., 1328

Newcomb, David E.
see Drescher, Andrew, 704

Newell, Charles J.
see Bedient, Philip B., 1240

Newtson, Craig M.
Effects of Aggregate Top Size on Bituminous Concrete, 732

Nezu, Iehisa
Field Measurements of Secondary Currents in Straight Rivers, 526
see Naot, Dan, 515
see Naot, Dan, 578

Ng, C. K.
see Low, K. H., 202

Nguyen, N.
see Johnston, A. J., 575

Nicastro, David H.
Can Engineers Cut Curtain-Wall Failures?, 1291

Nielsen, Richard J.
Fatigue Reliability under Nonstationary Loads: Model Formulation, 843
Fatigue Reliability Under Nonstationary Loads: Model Application, 945

Nieuwjaar, Martin W. C.
see Van Rijn, Leo C., 1154

Nishido, Takayuki
see Hammad, Amin, 66

Nixon, W. A.
Model Study of a Cable-Moored Conical Platform, 44

Noack, Stephen T.
see Kulkarni, Ram B., 1049

Nocera, John J.
Sampling Sediment on a Complex Site, 1212

Noël, Denis
see Hechler, Jean-Jacques, 700

Nogueira, André Campos
Steady State Fluid Network Analysis, 518

Nollet, Marie-José
Behavior of Curtailed Wall-Frame Structures, 965

Noor, Ahmed K.
Hybrid Analytical Technique for Nonlinear Vibration Analysis of Thin-Walled Beams, 194

Norman, Michele Robbins
see Ham, Robert K., 370

Norman, W. Ray
Microsystems Irrigation in Niger, West Africa, 647

Norris, Gary M.
see Siddharthan, Raj, 270
see Siddharthan, Raj, 271

Norville, H. S.
see Behr, R. A., 817

Norville, H. Scott
Strength of New Heat Treated Window Glass Lites and Laminated Glass Units, 856

Norwich, W. T.
see O'Connor, James T., 139

Notthakun, Sawang
Regeneration of Adsorbents Using Heterogeneous Advanced Oxidation, 343

Novak, M.
see Ramadan, O., 206

Novak, Paul A.
Housing Linkage Fees: Lessons for Los Angeles, 1096

Novotny, Richard L.
see Hilton, Joseph R., Jr., 1215

Nowak, Andrzej S.
Effect of Truck Loads on Bridges, 1082
see Sommer, Anne Mette, 1005

Nowak, P. S.
Eccentric Connection Design: Geometric Approach, 839

Nowatzki, E. A.
see Orman, M. E., 396

Nowell, Arthur R. M.
see Long, Charles E., 565

Nwogu, Okey
Alternative Form of Boussinesq Equations for Nearshore Wave Propagation, 1185

Oates, Teri D.
Practice of Professionalism, 761

Obata, Makoto
see Goto, Yoshiaki, 871

O'Brien, J. S.
Two-Dimensional Water Flood and Mudflow Simulation, 507

Ock, Jong H.
see Paek, James H., 127

O'Connor, J. T.
see Hornaday, W. C., 111

O'Connor, James T.
Analysis of Highway Project Construction Claims, 748
Fossil Power Plant Constructability: Applications of CII Concepts, 139
Need for Specification Format that Accommodates Engineered Projects, 128

Odgaard, A. Jacob
see Neary, Vincent S., 568

Oehlers, Deric John
Composite Profiled Beams, 866

Ogden, Fred L.
Strength of Bentonite Water-Well Annulus Seals in Confined Aquifers, 597

Ohta, Toshiaki
see Yamaguchi, Eiki, 921

Ohura, Takashi
Erection and Field Test of Concrete Arch Bridge Applying Composite Tube, 122

Oishi, Hiroshi
see Sonu, Choule J., 1303

Ojdrovic, Rasko P.
see Zarghamee, Mehdi S., 958
see Zarghamee, Mehdi S., 959

O'Keefe, Larry
Trenchless Track Record, 1274

Oloufa, Amr A.
Modeling Operational Activities in Object-Oriented Simulation, 56

Olsen, Nils R. B.
Three-Dimensional Calculation of Scour Around Cylinders, 556

Olsson, Nils
Supply-Side Solutions, 1225

Olszewski, P.
Overall Delay, Stopped Delay, and Stops at Signalized Intersections, 1081

Ong, Y. K.
see Low, K. H., 202

Ongerth, Jerry E.
see Long, Jennifer L., 316

Onu, Gelu
Parallel Connecting Beams for Equivalent Structures, 986

Onysko, Kira A.
see Baetz, Brian W., 322

Opiela, Kenneth S., ed.
see Chow, John, ed., 1372

Oppenheim, Irving J.
see Kub, Edward G., II., 737

Orlowski, Anthony C.
see Drumm, Eric C., 384

Orman, M. E.
Prediction of Bedding Intrusion into Low-Strength Subgrades, 396

Oron, Gideon
Recycling Drainage Water in San Joaquin Valley, California, 599

O'Rourke, Michael
Pipeline Damage Due to Wave Propagation, 463

Osipenko, N. M.
see Goldstein, R. V., 45

Oskard, Morton S.
see Wekezer, Jerzy W., 1067

Ostfeld, Avi
Optimal Operation of Multiquality Networks. I: Steady-State Conditions, 1143
Optimal Operation of Multiquality Networks. II: Unsteady Conditions, 1144

Osula, Douglas O. A.
Laboratory Trial of Soil–Sodium Chloride–Cement Stabilization for Problem Laterite, 1037

Oswald, Thomas H.
see Burati, James L., Jr., 695

Oswell, Mike A.
Hong Kong's Wastewater Underground, 1281

Othman, Majdi A.
Force-Displacement Behavior of Flexible Plate Anchors, 409
see Benson, Craig H., 390

Oumeraci, H.
Classification of Breaking Wave Loads on Vertical Structures, 1169

Overcash, Michael F.
see Barlaz, Morton A., 348

Ozbay, K.
see Hobeika, A. G., 1062

Özhan, Erdal
see Abdalla, Saleh, 1147

Öztürk, Mustafa
Degradation of Acetate, Propionate, and Butyrate under Shock Temperature, 317

Pabst, Don
see Ramrath, Thomas J., 1304

Pacheco, Benito M.
Estimation Curve for Modal Damping in Stay Cables with Viscous Damper, 918
Keeping Cables Calm, 1283

Padmanabhan, G.
see Yoon, Jaewan, 1140

Paek, James
Analyzing Competitive Position in the Construction Market of Eastern Europe, 664

Paek, James H.
Pricing Construction Risk: Fuzzy Set Application, 127

Page, Dorriah L.
see Johnston, Robert A., 1064

Pak, Ronald Y. S.
Rational Mechanics of Axial Soil-Pile Interaction, 196

Palassopoulos, G. V.
New Approach to Buckling of Imperfection-Sensitive Structures, 198

Pan, L. B.
Long-Term Shortening of Concrete Columns in Tall Buildings, 934

Panchang, Vijay G.
Inverse Adjoint Estimation of Eddy Viscosity for Coastal Flow Models, 523

Pandian, N. S.
Tropical Clays. I: Index Properties and Microstructural Aspects, 426
Tropical Clays. II: Engineering Behavior, 427

Pantelides, Chris P.
Postbreakage Behavior of Heat Strengthened Laminated Glass under Wind Effects, 830

Papadopoulos, A.
see Madramootoo, C. A., 658

Papageorgiou, Apostolos S.
see Kim, Jaekwan, 183

Papia, Maurizio
see La Mendola, Lidia, 902

Paramasivam, P.
see Murugappan, K., 726

Paramasivam, R.
see Mhaisalkar, V. A., 369

Parchure, T. M.
see Sharp, James J., 527

Parfitt, M. K.
Checklist of Critical Success Factors for Building Projects, 679
Computer-Integrated Design Drawings and Construction Project Plans, 126

Park, Heekyung
Redundancy-Constrained Minimum-Cost Design of Water-Distribution Nets, 1106

Parker, Gary
Sediment Feed and Recirculating Flumes: Fundamental Difference, 566

Parola, A. C.
Stability of Riprap at Bridge Piers, 558

Paroli, R. M.
Ranking PVC Roofing Membranes Using Thermal Analysis, 702

Parrish, John B., III.
Cal Poly Model Canal, 631
see Holly, Forrest M., Jr., 634

Parry, Stephen T.
see Kumar, Ashok, 1050

Parsons, B. L.
Notch Sensitivity of First-Year Sea Ice, 226

Partenscky, H. W.
see Oumeraci, H., 1169

Paterson, Kurtis G.
Vegetative Alteration of Nitrate Fate in Unsaturated Zone, 360

Pathal, Santosh K.
see Swamee, Prabhata K., 656

Patnaik, Jacob
Recycling on the Mississippi, 1207

Pau, S. H.
Prospects for No-Dig Technology in Hong Kong Construction Industry, 114

Paul, Donald R.
see Rebeiz, Karim S., 713

Paul, E.
see Vipulanandan, C., 701

Peak, Michael T.
see Miyake, T. Ted, 1282

Pearson, Mark
GIS and Storm-Water Management, 1278

Peck, William F.
Motivating Technical Employees, 1229

Pedersen, G.
see Harbitz, C. B., 573

Peek, Ralf
see Yi, Waon-Ho, 230

Pegram, Geoffrey G. S.
see Pegram, Guy C., 502

Pegram, Guy C.
Integration of Rainfall via Multiquadric Surfaces over Polygons, 502

Pei, Jianping
Thermal Stresses in Spherical Shells, 22

Pekoz, Teoman
see Miller, Thomas H., 841

Pellegrino, S.
see Lipscombe, P. R., 231

Pellicane, Patrick J.
Plywood–Solid-Wood Nailed Joints Under Lateral Loading, 712
see Franco, Nilson, 931

Penmetsa, Ravi K.
STEP: Model for Technology Screening for Hazardous-Waste-Site Cleanup, 311

Pennoni, C. R. "Chuck"
Mandatory Continuing Professional Development for Relicensing of Engineers, 796

Pérez, Rafael
Improved Design of Branched Networks by Using Pressure-Reducing Valves, 503

Perić, Dunja
Prediction of Plastic Localization Using MRS-Lade Model, 413

Perram, David L.
see Notthakun, Sawang, 343

Perumal, M.
see Dooge, J. C. I., 609

Petroski, Henry
Failure as Source of Engineering Judgment: Case of John Roebling, 736

Peyrot, A. H.
see Dagher, H. J., 823

Pfeffer, J. T.
see Kao, J. -J., 356

Pfeffer, John T.
see Uber, James G., 6

Phang, Michael K.
see Highter, William H., 768

Phang, W. A.
see El Halim, A. O. Abd, 1086

Philips, Martin
see O'Keefe, Larry, 1274

Phillips, Timothy L.
Lateral Load Sharing by Diaphragms in Wood-Framed Buildings, 894

Philpot, Timothy A.
Serviceability Design in LRFD for Wood, 1012

Pi, Zhanzhong
see Hjelmfelt, Allen T., Jr., 602

Piau, Jean Michel
see Ulm, Franz-Josef, 844

Piché, Robert
Lower Bounds for Critical Buckling Load Using Matrix Norms, 212

Pickell, Mark B., ed.
Pipeline Infrastructure II, 1376

Pickering, Karen D.
Cost Model for Low-Pressure Membrane Filtration, 347

Piekarski, Julian A.
see Eldin, Neil N., 372

Pietroniro, A.
see Kouwen, N., 1118

Pilkey, Walter D.
see Shah, Sudhir J., 273

Pinkowski, Brian
Whose Risk Is It, Anyway?, 1285

Pinon, Christian
see Hechler, Jean-Jacques, 700

Piper, Richard A.
Reduction of Deep Percolation and Drain Water, 622

Pires, Jose A.
see Sun, Keming, 461

Planck, S. M.
Postcompression and Superimposed Trusses for Bridge Rehabilitation, 861

Plaut, Raymond H.
Lateral Bracing Forces in Columns with Two Unequal Spans, 969
Requirements for Lateral Bracing of Columns with Two Spans, 970

Plourde, Rodney P.
see Chertow, Mark, 759

Plum, Carsten M.
Simple Method to Stabilize I-Beams Against Lateral Buckling, 966

Plumacher, Kim
Meshing Computer Technologies, 1194

Poirot, James W.
Meeting Professional Development Needs in Large Consulting Firm, 795
Sharing the Pride, 767

Polak, M. A.
Nonlinear Analysis of Reinforced-Concrete Shells, 1001

Polepeddi, R. K.
see Hahin, C., 814

Pollock, David G., Jr.
see McLain, Thomas E., 976

Pollock, R. W.
see Betts, M., 794

Polyzois, D.
Web-Flange Interaction in Cold-Formed Steel Z-Section Columns, 953

Ponce, Victor M.
Verification of Theory of Roll-Wave Formation, 537

Popplewell, N.
see Yu, P., 291
see Yu, P., 292

Porebska, M.
see Sage, J. D., 49

Porter, James C.
Ethics in Practice, 762
Exploiting the Leadership Asset of the Engineer, 677

Port-Hull, Candace
The Financing Fray, 1320
Infrastructure, IFC-Style, 1311
Lost & Found: Comeback at the IDB, 1316

Postyn, Adam
see Islander, Robert L., 15

Potts, David M.
see Dounias, George T., 485

Poulos, Harry G.
Piled Rafts in Swelling or Consolidating Soils, 397

Powers, J. P.
see Gould, James P., 1206

Pradel, Daniel
Effect of Permeability on Surficial Stability of Homogeneous Slopes, 392

Prasad, Y. V. S. N.
see Rao, S. Narasimha, 394
see Rao, S. Narasimha, 422

Prendergast, John
Building the SSC: A Texas-Sized Challenge, 1263
Engineering Sustainable Development, 1279
Environmental Consulting Grows Up, 1211

Fit to Drink, 1232
IVHS: The Invisible Revolution, 1221
Pioneer Highway, 1250
Privatization Takes Its Toll, 1197
Two-Time Winner, 1300

Pressley, Jackson R.
see Ramrath, Thomas J., 1304

Protopapas, Angelos L.
see Vradis, George C., 498

Prybella, Robert W., Jr.
see Shah, Dipak D., 133

Publications Division, American Society of Civil Engineers
Transactions of the American Society of Civil Engineers 1992, 1387

Puffer, Andrew, ed.
see Laska, Shirley, ed., 1340

Pugh, Alan
Triple Plate Balanced Resistance Water-Level Gauge, 517

Pulsifer, John M.
see Sayed, Sayed M., 719

Puppala, Anand J.
Cone Penetration in Cemented Sands: Bearing Capacity Interpretation, 491

Puyana-Camargo, Manuel
see Hastak, Makarand, 130

Qian, Xuede
Voids and Granulometry: Effects on Shear Modulus of Unsaturated Sands, 391

Qin, Fei
see Shahrooz, Bahram M., 992

Qin, Xinhua
see Ferguson, Kendall, 1015

Quick, Michael C.
see Millar, Robert G., 574

Quint, Malcolm
see Loudon, William, 1228

Raad, Glen
see Pradel, Daniel, 392

Radtke, Michael W.
Project-Level Model Process for Implementing Constructability, 132
see Russell, Jeffrey S., 735

Raftoyiannis, Ioannis G.
see Barbero, Ever J., 720

Rager, Ronald E.
see Hilton, Joseph R., Jr., 1215

Rahman, Sharif
Markov Model for Seismic Reliability Analysis of Degrading Structures, 912

Raichle, Andrew W.
see Kobayashi, Nobuhisa, 1149

Raines, Timothy H.
Estimation of Flood Frequencies for Ungaged Catchments, 561

Rajani, B.
Pipelines and Laterally Loaded Piles in Elastoplastic Medium, 459

Rajapakse, R. K. N. D.
Green's Functions for Transversely Isotropic Elastic Half Space, 251
Stress Analysis of Borehole in Poroelastic Medium, 220

Rajapakse, Ruwan A.
see Meegoda, Namunu J., 345

Rajkumar, C.
see Mullick, A. K., 740

Raju, K. Kanaka
Thermal Postbuckling of Uniform Columns on Elastic Foundation, 184

Ramadan, O.
Simulation of Spatially Incoherent Random Ground Motions, 206

Ramamurthy, Amruthur S.
Characteristics of Circular-Crested Weir, 557

Ramanjaneyulu, K.
see Rao, P. Srinivasa, 279

Ramaswamy, Rohit
see Ben-Akiva, Moshe, 1030

Ramos, Robson F.
see Ruhl, Terry A., 1071

Ramrath, Thomas J.
Egypt's Real Time Water Management, 1304

Rance, J. P.
see Ulanicki, B., 1136

Randell, Nicholas G.
see San Giacomo, Richard, 1233

Randolph, Brian W.
see Wu, Tien H., 381

Randolph, Dennis
Civil Engineering for the Community, 1331

Randolph, Mark F.
see De Nicola, Anthony, 489

Rao, A. S. Prasada
see Rao, S. V. Krishna Mohan, 1008

Rao, C. R. Nagendra
Sorption of Copper(II) from Aqueous Phase by Waste Biomass, 321

Rao, G. Venkateswara
see Raju, K. Kanaka, 184

Rao, K. A.
see Subbaiah, R., 648

Rao, P. Srinivasa
Stability of Cooling Tower Shell with Modified Wind Pressure Coefficients, 279

Rao, S. Narasimha
Estimation of Uplift Capacity of Helical Anchors in Clays, 394
Uplift Behavior of Pile Anchors Subjected to Lateral Cyclic Loading, 422

Rao, S. V. Krishna Mohan
Time-Dependent Analysis of Cracked Partially Prestressed Concrete Members, 1008

Rasdorf, William J.
see Abudayyeh, Osama Y., 61

Rasheeduzzafar
see Al-Saadoun, S. S., 721
see Hussain, S. Ehtesham, 707

Rasmussen, K. J. R.
Design of Cold-Formed Stainless Steel Tubular Members. I: Columns, 940
Design of Cold-Formed Stainless Steel Tubular Members. II: Beams, 941

Rasmussen, William O.
Visibility Near Intersection Partially Obscured by Vegetation, 1066

Rauch, Alan F.
Performance of Deep-Corrugated Steel Box-Type Culvert, 400

Ravindra, M. K.
see Tang, H. T., 142

Ray, Gautam
see Schoephoerster, Richard T., 191

Rebeiz, Karim S.
Recycling Plastics in Polymer Concrete for Construction Applications, 713

Recarte Suazo, Guillermo Arturo
Comparison of Construction Safety Codes in United States and Honduras, 115

Reddi, Lakshmi
Feasibility of Ultrasonic Enhancement of Flow in Clayey Sands, 346

Reddy, L. Srinivasa
see Wood, Don J., 550

Reddy, R. Ramesh
Expert System for Optimum Design of Concrete Structures, 59

Redwood, Richard G.
see Harries, Kent A., 1010

Reed, Brian E.
Acid-Base Characteristics of Powdered-Activated-Carbon Surfaces, 335
Modeling Cd Adsorption in Single and Binary Adsorbent (PAC) Systems, 318

Reed, John W.
Introduction to Structural Failure Modes for Nuclear Power Facilities, 140
see Farrar, Charles R., 143

Rees, Stephen William
Simulating Seasonal Ground Movement in Unsaturated Clay, 446

Refsgaard, J. C.
see Lohani, V. K., 582

Reible, D. D.
Comparison of Physical Transport Processes in Noncohesive River Sediments, 303

Reimer, Richard B.
see Fenves, Gregory L., 8

Reinhardt, William G.
Private Financing for Infrastructure, 1312

Reinhorn, A. M.
Full-Scale Implementation of Active Control. II: Installation and Performance, 917
see Mokha, A. S., 819

Reinhorn, Andrei
see Nagarajaiah, Satish, 286

Reinhorn, Andrei M.
see Nagarajaiah, Satish, 813
see Nagarajaiah, Satish, 971

Reinschmidt, Kenneth F.
Integration of Engineering, Design, and Construction, 14

Remmetter, Mark E.
see Shahrooz, Bahram M., 992

Ren, Xugui
see Wang, Keh-Han, 208

Rendon-Herrero, Oswald
Including Failure Case Studies in Civil Engineering Courses, 749
Too Many Failures: What Can Education Do?, 744

Reznik, Yakov M.
Plate-Load Tests of Collapsible Soils, 411

Rhodes, J.
see Seah, L. K., 149

Rice, Charles E.
Protection Against Scour at SAF Stilling Basins, 501

Richards, R., Jr.
Seismic Bearing Capacity and Settlements of Foundations, 414

Richardson, J. E.
see Panchang, Vijay G., 523

Rickabaugh, Janet F.
Evaluation of Trace VOC Emissions from Sanitary Landfills, 340

Rickard Liow, S. J.
see Betts, M., 794

Ricles, James M.
Marine Component Fatigue Reliability, 932

Rifai, Hanadi S.
see Bedient, Philip B., 1240

Riley, M. A.
see Reinhorn, A. M., 917

Riley, Michael A.
see Nagarajaiah, Satish, 286

Rindels, Alan J.
see Gulliver, John S., 511

Risley, John C.
Salinity-Intrusion Forecasting System for Gambia River Estuary, 1121

Ritter, W. F.
Nitrate Leaching under Irrigated Corn, 620

Ro, Kyoung S.
see Hsieh, Chu-Chin, 365

Roberts, Philip J. W.
Hydraulic Model Study for Boston Outfall. I: Riser Configuration, 551
Hydraulic Model Study for Boston Outfall. II: Environmental Performance, 552

Robertson, P. K.
see Gu, W. H., 393

Robinson, A. R.
Improved Time-History Analysis for Structural Dynamics II: Reduction of Effective Number of Degrees of Freedom, 297
see Chen, C. -C., 296

Robinson, Cedric G.
see James, Wesley P., 1103

Robinson, David I.
Computer Modeling of Side-Flow Weirs, 653

Robinson, John B. L.
see Sparks, Gordon A., 1046

Robison, Rita
The Copper-Clad Library, 1284
The French Composite: A Bridge for Normandy, 1205
Metric Design: It's Real, 1248

Roddis, W. M. Kim
Structural Failures and Engineering Ethics, 893

Rodellar, José
Control Method for On-Demand Operation of Open Channel Flow, 596

Roeder, Charles W.
Seismic Behavior of Moment-Resisting Steel Frames: Analytical Study, 913
see Schneider, Stephen P., 914

Rocsset, José M.
see Bougacha, Samir, 245
see Bougacha, Samir, 246

Roetter, Steven P.
Lead is a Four-Letter Word, 1257

Rofooei, Fayaz R.
Optimal Control of Structures with Acceleration, Velocity and Displacement Feedback, 267

Rogers, C. A.
Technology Assessment and Development of Large Deployable Antennas, 18

Rogers, D. C.
see Merkley, G. P., 635

Rogers, David C.
Description and Evaluation of Program USM, 633
Field Data for Verifying Canal Unsteady Flow Models, 632

Rollings, Raymond S.
Curling Failures of Steel-Fiber-Reinforced Concrete Slabs, 733

Rolston, Dennis E.
see Angelakis, Andreas N., 615

Romana, Manuel
see Ruhl, Terry A., 1071

Romano, Filippo
Cracked Nonlinear Masonry Stability under Vertical and Lateral Loads, 810
Elastoplastic Deflections for Prismatic and Nonprismatic Beams, 214

Romstad, Karl M.
see Chajes, Michael J., 834

Ronold, Knut
see Meehan, Richard L., 771

Rood, Mark J.
see Chang, Moo Been, 324

Rosowsky, D. V.
Reliability-Based Design of Wood Members Subject to Ponding, 994

Rosowsky, David V.
see Bulleit, William M., 954
see Philpot, Timothy A., 1012

Ross, Mark A.
Integrated Hydrologic Modeling with Geographic Information Systems, 1108

Rossman, Lewis A.
Discrete Volume-Element Method for Network Water-Quality Models, 1133

Roth, Lawrence H.
see Shapiro, Jill, 1280

Roth, Steven R.
Landfill on Screen, 1244

Rowings, James E., Jr.
see Federle, Mark O., 87

Rubin, B. S.
see Fabrikant, V. I., 281

Rubin, Robert A.
Sustainable Development and National Laws, 784

Ruff, James F.
see Adam, Ahmed M., 549
see Ogden, Fred L., 597

Ruhl, Terry A.
Assessing Potential for Superhub Airport for California, 1071

Runesson, K.
see Stankowski, T., 165
see Stankowski, T., 166

Runesson, Kenneth
Properties of Incremental Solutions for Dissipative Material, 186
see Perić, Dunja, 413

Russell, Alan D.
Computerized Daily Site Reporting, 104
New Generation of Planning Structures, 93

Russell, Eugene R.
see Harwood, Douglas W., 1040

Russell, Eugene R., Sr.
Rating Countermeasures for Mitigation of Hazardous Materials Incidents, 1042

Russell, Jeffrey S.
Comparison of Two Corporate Constructability Programs, 129
Documented Constructability Savings for Petrochemical-Facility Expansion, 735
see Jeljeli, Mohamed N., 85
see Radtke, Michael W., 132
see Severson, Gordon D., 134

Sabina, Erik
Designing Private Funding Programs for Public Highways, 1098

Saccomanno, F. F.
Hazmat Transport Risks: Societal and Individual Perspectives, 1039

Saeger, Kevin J.
Effect of Localized Bending at Through-Flaws in Pressurized Composite Cylinders, 40

Sage, J. D.
Frost Action in a Hydrophobic Material, 49

Sagmeister, Bernhard
see Wörner, Johann-Dietrich, 170

Sahin, M. A.
see Galdos, N. H., 916

Saka, M. P.
see Ahmadi, B. H., 982

Sakumoto, Y.
Tests of Fire-Resistant Bolts and Joints, 983

Salem, Tarek H.
see Meyer, Steffen P., 1113

Saliba, Joseph E.
Developing Competent Civil Engineering Writers, 765

Salim, H. A.
see Davalos, J. F., 859

Salim, Md.
see Bernold, Leonhard E., 100

Salmon, Michael W.
see Farrar, Charles R., 143

Samaddar, Sujit K.
see Czarnecki, R. Martin, 144

Samani, Zohrab
Measuring Water in Trapezoidal Canals, 592

Samani, Zohrab A.
see Hanson, Adrian T., 350

San Giacomo, Richard
Invasion of the Zebra Mussels, 1233

Sanders, Steve R.
Managing Implementation of Change, 687
Masonry Productivity Forecasting Model, 91

Santamarina, J. C.
see Cesare, M., 1076

Santhakumar, A. R.
see Knight, G. M. S., 845

Sanvido, V. E.
see Parfitt, M. K., 679

Sargand, Shad M.
see Rauch, Alan F., 400

Sarikaya, Hasan Z.
see Abu-Rizaiza, Omar S., 1146

Sathisan, Shashi K.
see Kanafani, Adib, 1070

Savabi, M. R.
Modeling Subsurface Drainage and Surface Runoff with WEPP, 642

Savant-Malhiet, S. A.
see Reible, D. D., 303

Savenije, Hubert H. G.
Determination of Estuary Parameters on Basis of Lagrangian Analysis, 528

Sayed, Mohamed
see Løset, Sveinung, 46

Sayed, Sayed M.
Construction and Performance of Shoulders Using Unrap Base, 719

Sayles, Gregory D.
see Flora, Joseph R. V., 355

Scaloppi, Edmar J.
Hydraulics of Center-Pivot Laterals, 621
Hydraulics of Irrigation Laterals: Comparative Analysis, 586

Scanlan, Robert H.
Bridge Buffeting by Skew Winds in Erection Stages, 163
Problematics in Formulation of Wind-Force Models for Bridge Decks, 229
see Ehsan, Fazl, 832
see Goswami, Indranil, 283
see Goswami, Indranil, 284

Scarborough, R. W.
see Ritter, W. F., 620

Schall, James D.
Incorporating Dam Break Concerns in School Site Selection, 1092

Schelling, D. R.
see Galdos, N. H., 916

Schladow, Geoffrey
see Casamitjana, Xavier, 326

Schladow, S. Geoffrey
Lake Destratification by Bubble-Plume Systems: Design Methodology, 512

Schleppe, J. B.
see McLellan, J. F., 1019

Schmertmann, John H.
Conical Test Load Measuring Compressibility, 435

Schmidt, Kenneth D.
Hydrogeologic Factors Affecting Mobility of Trace Inorganic Constituents, 625

Schmidt, Peter J.
see McCrary, Steven W., 1099

Schmidt, Richard J.
Plasticity Model for Transversely Isotropic Materials, 192

Schmitt, Roger C.
see Sayed, Sayed M., 719

Schmitz, Gerd H.
Transient Infiltration from Cavities. I: Theory, 612
Transient Infiltration from Cavities. II: Analysis and Application, 613

Schneider, Stephen P.
Seismic Behavior of Moment-Resisting Steel Frames: Experimental Study, 914
see Roeder, Charles W., 913

Schnoor, Jerald L.
see Nair, Dhileepan R., 351
see Paterson, Kurtis G., 360

Schoephoerster, Richard T.
Finite Analytic Model for Left Ventricular Systolic Flow Dynamics, 191

Schonfeld, Paul M.
see Chang, Shyue Koong, 1065

Schoon, John G.
Geometric Design Projects for Highways: An Introduction, 1358

Schrøder, Knut
see Andersen, Knut H., 466

Schulz, Jeffrey
In Search of Better Load Ratings, 1275

Schupack, Morris
Bonded Tendon Debate, 1266

Schuurmans, W.
see Clemmens, A. J., 636

Schuurmans, Wytze
Description and Evaluation of Program MODIS, 637
see Contractor, Dinshaw N., 630

Schwarz, Charles R.
Blunder Detection and Data Snooping in LS and Robust Adjustments, 1023

Scirocco, Francesco
see Castellani, Alberto, 1000

Sclavounos, P. D.
see Wang, P. F., 216

Scott, David
see McGreight, Patrick, 1258

Scott, R. F.
see Arulanandan, K., 452

Scott, Stephen H.
Uncertainty Analysis of Dredge-Production Measurement and Calculation, 1158

Scott, Verne H.
see Angelakis, Andreas N., 615

Seah, L. K.
Simplified Buckling Analysis of Plate with Compound Edge Stiffeners, 149

Searer, Gary
see Dolan, Charles W., 793

Seed, H. B.
see Arulanandan, K., 477

Seed, R. B.
see Arulanandan, K., 477

Selinger, Thomas J.
Canada's Environmental Review of the North American Free Trade Agreement, 785

Sellin, R. H. J.
see Ervine, D. A., 576

Selvadurai, A. P. S.
Frost Heave Induced Mechanics of Buried Pipelines, 488

Sen, Rajan
Collapse Load Analysis of Continuous, Posttensioned Voided Slab Bridge Models, 911

Senadheera, Sanjaya
see Tang, Tianxi, 1068

Şener, Sıddık
Effect of Rib Eccentricity on Infinitely Long Cylindrical Shells, 237

Senneset, Kare
see Puppala, Anand J., 491

Senouci, Ahmed B.
see Eldin, Neil N., 729

Sepponen, Carl
Sludge Under Pressure, 1198

Serra, M.
Flexural Buckling of Pretwisted Columns, 224

Sethuraman, Raja
see Hobeika, Antoine G., 1043

Setterburg, Robert
see Biller, Benjamin J., 1201

Severson, Gordon D.
Trends in Construction Contractor Financial Data, 134

Seymour, F. Stuart
see Sepponen, Carl, 1198

Shafai-Bajestan, Mahmood
Riprap Criteria below Pipe Outlet, 504

Shah, A. H.
see Yu, P., 291
see Yu, P., 292

Shah, D. K.
Delamination Characteristics around Hole in Laminates with Softening Strip, 29

Shah, Dipak D.
Performance of Remotely Controlled Fiberglass Pipe Jacking System, 133

Shah, Sudhir J.
Lumped-Parameter Approach to Stability Analysis, 273

Shahawy, Mohsen
see Huang, Dongzhou, 942

Shahrooz, Bahram M.
Seismic Design and Performance of Composite Coupled Walls, 992

Sham, S. H. R.
Nonmonotonic Reasoning in Design, 53

Shamir, Uri
see Ostfeld, Avi, 1143
see Ostfeld, Avi, 1144
see Shvartser, Leonid, 1141

Shapira, Aviad
Octree Subdivision of Building Elements, 75
see Laufer, Alexander, 107

Shapiro, Jill
Keller Canyon Fills a Need, 1280

Sharif, Alfarabi
Time-Dependent Losses in Prestressed, Continuous Composite Beams, 984

Sharit, J.
Expert System Based Training for Emergency Management, 51

Sharma, Satish C.
Duration and Frequency of Seasonal Traffic Counts, 1051
Yearly Variation of Directional Distribution of Highway Traffic, 1059

Sharp, James J.
Selective Withdrawal Using Circular, Partly Submerged Intake Structures, 527

Sharp, John C., ed.
Shotcrete for Underground Support V, 1381

Sharp, Kevan D., ed.
Fly Ash for Soil Improvement, 1356

Shashidhara, N.
see Balasundaram, V., 1214

Shaw, Douglas T.
SITE CODE: Computer-Based Regulatory Information for Site Development, 1087

Shea, Conor
Integrated GIS and Hydrologic Modeling for County-wide Drainage Study, 1107

Shelley, Thomas L.
Effect of Gravel on Hydraulic Conductivity of Compacted Soil Liners, 377

Shen, Hsieh Wen, ed.
Hydraulic Engineering '93, 1364

Shen, Hui-shen
Postbuckling Analysis of Stiffened Laminated Box Columns, 150

Shen, Xiaofeng
see Wörner, Johann-Dietrich, 170

Shen, Yung-Ching
Use of Knowledge Graphs to Formalize Decisions in Preserving Pavements, 77

Sheng, L. H.
see Hwang, J. S., 981

Sheng, Yuanjing
see Liang, Robert Y., 440

Shenton, H. W., III.
Relative Performance of Fixed-Base and Base-Isolated Concrete Frames, 972

Shepherd, Robin
Earthquake Damage Lessons from Big Bear Lake, California, 1992, 753

Sherali, Hanif D.
see Hobeika, Antoine G., 1053

Sherbourne, A. N.
see Lu, F., 277

Sherbourne, Archibald N.
Plate-Stiffener Assemblies in Uniform Compression. Part II: Postbuckling, 265
see Bedair, Osama K., 264

Sheridan, Darrel L.
see Norville, H. Scott, 856

Sheu, M. S.
see Cheng, F. Y., 990

Shi, Lei
see Michalowski, Radoslaw L., 473

Shi, X. P.
Warping Stresses in Concrete Pavements on Pasternak Foundation, 1085

Shi, Y. P.
Analysis of Adhesive-Bonded Cylindrical Lap Joints Subjected to Axial Load, 182

Shiau, Le-Chung
Delamination Effect on Flutter of Homogeneous Laminated Plates, 34

Shih, Hong
see Islander, Robert L., 15

Shih, Sun F.
Use of Landsat Thermal-IR Data and GIS in Soil Moisture Assessment, 646

Shinde, S. B.
see Selvadurai, A. P. S., 488

Shinozuka, Masanobu
see Feng, Maria Qing, 259

Shirley, Edward D.
see Lopes, Vicente L., 593

Shortreed, J. H.
see Saccomanno, F. F., 1039

Shortreed, John H.
see Stewart, John A., 1074

Show, Kuan-Yeow
see Tay, Joo-Hwa, 697

Shroader, Peter, ed.
see Awosika, Larry F., ed., 1343

Shute, Alan
see Kassoff, Hal, 757

Shvartser, Leonid
Forecasting Hourly Water Demands by Pattern Recognition Approach, 1141

Siddharthan, Raj
Moving Load Response of Layered Soil. I: Formulation, 270
Moving Load Response of Layered Soil. II: Verification and Application, 271

Sienkiewicz, Z.
Minimum-Weight Design of Machine Foundation Under Vertical Load, 254

Sikh, Tara S.
Swelling Soils, 423

Silva, Cesar L.
see Schoephoerster, Richard T., 191

Silva-Rodriguez, R.
see Larralde, J., 698

Silver, Marshall
Bringing Finance to the Table, 1314
Vietnam: Worth Looking Into, 1319

Silverston, Elliot
Reclaiming Clear-Cut Land, 1298

Simitses, George J.
see Mohamed, Salah E., 28

Simmons, Thomas M.
see Nocera, John J., 1212

Simonovic, Slobodan P.
see Bender, Michael J., 1134

Simons, Bryce
Spotting Specs Offenders, 1209

Singer, Linda
see Kassoff, Hal, 757

Singh, R. P.
see Reddy, R. Ramesh, 59

Singh, Vijay P.
see Naghavi, Babak, 659

Singhal, Avinash C.
System Flexibility and Reflected Pressures, 35

Sinha, Kumares C., ed.
see Hendrickson, Chris T., ed., 1374

Sinn, Robert
see Iyengar, Hal, 1260

Sinno, R. Ralph
X-Bracing Anchorage Connection, 996

Sivakugan, N.
Anisotropy Studies on Cuboidal Shear Device, 436

Sivanandan, R.
see Hobeika, A. G., 1062

Skaggs, R. W.
see Bentley, Walter J., 624

Skibniewski, M. J.
see Vähä, P. K., 25
see Vähä, P. K., 26

Skibniewski, Miroslaw J.
see Murtaza, Mirza B., 88
see Zhou, Y., 27

Skipper, Everett P.
see Ensor, W. Douglas, 1271

Skjelbreia, James Eric
see Synolakis, Costas Emmanuel, 1166

Skowroński, Wojciech
Buckling Fire Endurance of Steel Columns, 904

Slade, T.
see Parsons, B. L., 226

Slaughter, E. Sarah
Builders as Sources of Construction Innovation, 113

Slocum, Alexander H.
see Everett, John G., 82

Smith, Alec D.
Banking on a Bridge, 1219

Smith, Anne
see Culp, Gordon, 685

Smith, Bryan Stafford
see Nollet, Marie-José, 965

Smith, Christian
see Guralnick, Sidney A., 1027

Smith, Dennis R.
see Manzanarez, Rafael, 1224
see Srinivasan, 1204

Smith, Donald M.
Creep of Mass Concrete at Early Ages, 724

Smith, H. Allison
see Borja, Ronaldo I., 430

Smith, James A.
Conditional-Yield Operating Rules for Low-Flow Management, 1120

Smith, Michael Lee
Defensible Performance Appraisals, 669

Smith, N. R.
see Davis, R. O., 399

Smith, Trevor D., ed.
see Nelson, Priscilla P., ed., 1349

Snow, Michael S.
see Derian, Luther, 1301

Snyder, Darrell M.
see Fuhr, Peter L., 935

Snyder, Jonathan G.
Marketing Strategies for Engineers, 1370

Snyder, K. A.
see Natesaiyer, K., 708

Snyder, William H.
see Roberts, Philip J. W., 551
see Roberts, Philip J. W., 552

Soegiarso, Roesdiman
see Bishara, Alfred G., 858

Soeiro, F. J.
Damage Detection in Composite Materials Using Identification Techniques, 39

Sogge, R. L.
see Fishman, K. L., 453

Soh, Ai-Kah
Determination of Inter- and Free-Boundary Stresses in Plate Analysis, 173
Hot Spot Stresses of Tubular Joints Subjected to Combined Loadings, 842
Improved Method for Determining Interfacial Stresses in Composites, 21
see Soh, Chee-Kiong, 60

Soh, Chee-Kiong
Making Data Banks More Useful with Knowledge-Embedded Data-Base Systems, 60
see Soh, Ai-Kah, 173
see Soh, Ai-Kah, 842

Solari, Giovanni
Gust Buffeting. I: Peak Wind Velocity and Equivalent Pressure, 825
Gust Buffeting. II: Dynamic Alongwind Response, 826

Soltis, Lawrence A.
see McLain, Thomas E., 976

Sommer, Anne Mette
Probability-Based Bridge Inspection Strategy, 1005

Song, C. H.
see Huang, L. H., 553

Song, Ming-Huang
see Lee, Hong-Yuan, 496

Sonu, Choule J.
Harry Seed, Liquefaction & the Gravel Drain, 1303

Soong, T. T.
see Reinhorn, A. M., 917

Soong, Ta W.
see Mazumder, Bijoy S., 525

Sorensen, Jens, ed.
The Management of Coastal Lagoons and Enclosed Bays, 1368

Sørensen, John D.
see Enevoldsen, Ib, 865

Sørensen, Peter Borgen
see Christensen, Jimmy Roland, 307

Sorial, George A.
Competitive Adsorption of Phenols on GAC. I: Adsorption Equilibrium, 362
Competitive Adsorption of Phenols on GAC. II: Adsorption Dynamics under Anoxic Conditions, 363

Sorman, A. U.
Flood Hydrograph Estimation for Ungaged Wadis in Saudi Arabia, 1104

Soulis, E. D.
see Kouwen, N., 1118

South, J. M.
see Hahin, C., 814

Sowers, George F.
Human Factors in Civil and Geotechnical Engineering Failures, 388

Sozen, M. A.
see Eberhard, Marc O., 840

Sparks, Gordon A.
Effect of Vehicle Length on Passing Operations, 1046

Speitel, Gerald E., Jr.
Biofilm Reactors for Treatment of Gas Streams Containing Chlorinated Solvents, 341

Speth, Thomas F.
Glyphosate Removal from Drinking Water, 368

Spidle, Christopher
see Ruhl, Terry A., 1071

Sproule, William J., ed.
Automated People Movers IV, 1328

Spruch, Arthur A.
The Big No-Dig, 1305

Sputo, Thomas
History of Steel Beam-Column Design, 835
Sinkhole Damage to Masonry Structure, 738

Srinivasan
Fast-Track Stadium, 1204

Sriram, D.
see Agbayani, N., 1011

Srivastava, Vineet
see Das, Debendra K., 147

Stallings, J. M.
Tests and Ratings of Short-Span Steel Bridges, 928

Stamatopoulos, Aris C.
see Kotzias, Panaghiotis C., 434

Stanford, Robert E.
Determination of Most Representative Residential Subdivision, 138

Stankowski, T.
Fracture and Slip of Interfaces in Cementitious Composites. I: Characteristics, 165
Fracture and Slip of Interfaces in Cementitious Composites. II: Implementation, 166

Starossek, Uwe
Reduction of Dynamic Cable Stiffness to Linear Matrix Polynomial, 274

Stathopoulos, Theodore
Computation of Wind Pressures on L-Shaped Buildings, 239
see Jesień, Wojtek, 891
see Wu, Hanqing, 263

Stauble, Donald K., ed.
Beach Nourishment Engineering and Management Considerations, 1329

Stauffer, T. B.
see Hatfield, K., 332

Stefan, Heinz G.
see Hondzo, Midhat, 570

Steffler, Peter M.
see Jin, Yee-Chung, 499

Stein, O. R.
Criterion Delineating the Mode of Headcut Migration, 494

Stenman, H. K.
see Paroli, R. M., 702

Stensel, H. David
see Long, Jennifer L., 316

Stenstrom, Michael K.
see Hsieh, Chu-Chin, 365
see Hsieh, Chu-Chin, 366

Stephanedes, Yorgos J.
Application of Filtering Techniques for Incident Detection, 1028
Optimal Control of Freeway Corridor, 1061

Stephens, Rohan
Reservoir Destratification via Mechanical Mixers, 519

Stephens, Tamar
Pulsation Errors in Compressible Flow Measurement, 323

Sternik, M.
Decoupling of Lateral Equilibrium Equations for Asymmetric Multistory, 967

Stewart, John A.
Risk and Capacity Impacts of ATC Separation Rules, 1074

Stewart, Mark G.
Modeling Human Performance in Reinforced Concrete Beam Construction, 81

Stiemer, S. F.
Object-Oriented Approach to Ambient Vibration Measurement Analysis, 74

Stopher, P. R.
Deficiencies of Travel-Forecasting Methods Relative to Mobile Emissions, 1075

Storm, B.
see Lohani, V. K., 582

Storm, Daniel E.
see Tayfur, Gokmen, 495

Strand, Stuart E.
see Long, Jennifer L., 316

Strange, Peter S.
TQM: A View from The Playing Field, 689

Strelkoff, T. S.
Numerical Methods Used to Model Unsteady Canal Flow, 628

Stricklin, Guy M.
see Evans, Ginger S., 1236

Struzziery, John J.
see Spruch, Arthur A., 1305

Stumvoll, M.
Deformation Behavior of Ductile Solids Containing Anisotropic Damage, 228

Sture, S.
see Stankowski, T., 165
see Stankowski, T., 166

Sture, Stein
see Perić, Dunja, 413

Stutzman, W. L.
see Rogers, C. A., 18

Su, S. T., ed.
see Shen, Hsieh Wen, ed., 1364

Subbaiah, R.
Root Growth Simulation Model Under Specified Environment, 648

Subramaniam, R.
see Hobeika, A. G., 1062

Suen, Eric S.
see Guralnick, Sidney A., 1027

Suh, Kyung Duck
Application of Angular Spectrum Model to Simulation of Irregular Wave Propagation, 1176

Suidan, Makram T.
see Flora, Joseph R. V., 355
see Sorial, George A., 362
see Sorial, George A., 363

Sulekh, Ajai
see Pacheco, Benito M., 918

Sulisz, Wojciech
Diffraction of Second-Order Surface Waves by Semisubmerged Horizontal Rectangular Cylinder, 1156
Second-Order Wave Loads on Planar Wavemakers, 1177

Sullivan, Dennis P.
Slip-Lining Solution, 1288

Sultan, Nels J.
Irregular Wave-Induced Velocities in Shallow Water, 1172

Sumer, B. M.
Influence of Cross Section on Wave Scour Around Piles, 1174

Sun, Keming
Effects of Ice Layer on Hydrodynamic Pressure of Structures, 47
Simplified Approach for Pile and Foundation Interaction Analysis, 461

Sun, L. M.
see Fujino, Y., 1003

Sun, Xianghong
see Sen, Rajan, 911

Sunder, S. Shyam
Numerical Modeling of Transient Creep in Polycrystalline Ice, 268

Surampalli, Rao Y.
Microbiological Stabilization of Sludge by Aerobic Digestion and Storage, 329

Surko, Alexander, Jr.
see Erickson, Bradley P., 1223

Sushinsky, Peter
see Shea, Conor, 1107

Susumpow, T.
see Kanok-Nukulchai, W., 1013

Sutardi
Governmental Priorities in Irrigation Project Selection in Indonesia, 1125

Sutoh, Atsushi
see Hoshiya, Masaru, 159

Svensson, Sven Eilif
see Plum, Carsten M., 966

Swamee, Prabhata K.
Analysis of Rectangular Side Sluice Gate, 656
Comprehensive Open-Channel Expansion Transition Design, 580
Critical Depth Equations for Irrigation Canals, 608
Design of a Submarine Oil Pipeline, 1038
Generalized Inner Region Velocity Distribution Equation, 530

Swoboda, G.
see Stumvoll, M., 228

Syal, M. G.
see Parfitt, M. K., 126

Sylvester, M. A.
see Engberg, R. A., 618

Synolakis, Costas Emmanuel
Evolution of Maximum Amplitude of Solitary Waves on Plane Beaches, 1166

Sze, Kam-Yim
Hybrid Plane Quadrilateral Element with Corner Rotations, 950

Szymkiewicz, Romuald
Oscillation-Free Solution of Shallow Water Equations for Nonstaggered Grid, 560

Tadjbakhsh, Iradj G.,
see Rofooei, Fayaz R., 267

Tadros, Maher K.
see Abdel-Karim, Ahmad M., 989

Taffinder, Glen Gregory
Measurement of Effective Diffusivities in Solidified Wastes, 299

Tahara, Yusuke
Nonlinear Free-Surface Flow in Oscillating Channel during Earthquakes, 195

Taher, Salah El-Din F.
see Sharif, Alfarabi, 984

Takabatake, Hideo
Doubly Symmetric Tube Structures. I: Static Analysis, 919
Doubly Symmetric Tube Structures. II: Dynamic Analysis, 920

Takemiya, Hirokazu
Transient Lamb's Solution for Surface Strip Impulses, 290

Talakoub, Hossein
Back to Iran, 1322

Tamaro, George
see Gould, James P., 1206
see McGreight, Patrick, 1258

Tan, K. H.
see Murugappan, K., 726

Tan, S. A.
see Shi, X. P., 1085

Tan, Seng C.
Failure Criteria for Fibrous Anisotropic Materials, 710

Tan, Siew-Ann
Ultimate Settlement by Hyperbolic Plot for Clays with Vertical Drains, 433

Tang, Agatha Y. S.
see Adams, Teresa M., 65

Tang, Boming
Structural Evaluation of Airfield Rigid Pavements Using Falling Weight Deflectometer, 1058

Tang, H. T.
Containment Capacity and Failure Modes for Conditions beyond Design Basis, 142
see Veletsos, Anestis S., 10

Tang, Tianxi
Analysis of Concave Curling in Concrete Slabs, 1068

Tang, Wilson H.
see Halim, Irwan S., 385

Tang, Yu
Dynamic Response of Tank Containing Two Liquids, 179
see Veletsos, Anestis S., 10

Tanji, K. K.
Saline Drain Water Reuse in Agroforestry Systems, 591
see Carter, D. L., 652
see Jurinak, J. J., 645

Tanji, Kenneth K.
Prognosis on Managing Trace Elements, 623
see Koluvek, Paul K., 649

Tanner, Jeanine
Making the Leap, 1247

Tanriverdi, Mustafa
see McKinney, Daene C., 1111

Tara, Patrick D.
see Ross, Mark A., 1108

Tarantino, Angelo Marcello
see Dezi, Luigino, 162
see Dezi, Luigino, 890
see Dezi, Luigino, 925
see Dezi, Luigino, 926

Tare, Vinod
Novel Technique for Evaluation of Advanced Anaerobic Reactors, 359

Tarrer, Arthur R.
see Yoon, Hyon H., 696

Tarricone, Paul
After the Blast, 1230

Deliverance, 1200
Plastic Potential, 1265
Recycled Roads, 1222
So Much Pavement, So Little Time, 1289
What Do You Mean by That?, 1226

Task Committee of the Urban Water Resources Research Council of the American Society of Civil Engineers and the Water Environment Federation
Design and Construction of Urban Stormwater Management Systems, 1348

Task Committee on Data Acquisition Systems of the Hydraulics Division of the American Society of Civil Engineers
Guidelines for PC-Based Data Acquisition Systems for Hydraulic Engineering, 1360

Task Committee on Design and Performance of Reversible Flow Trashracks
Hydraulic Design of Reversible Flow Trashracks, 1363

Task Committee on Pumped Storage of the Hydropower Committee of the Energy Division of the American Society of Civil Engineers
Compendium of Pumped Storage Plants in the United States, 1344

Task Committee on Ship Channel Design for the Committee on Waterways, Waterways, Port, Coastal, and Ocean Division, ASCE
Report on Ship Channel Design, 1380

Tassoulas, John L.
see Bougacha, Samir, 245
see Bougacha, Samir, 246

Tatum, C. B.
see Johnson, Kyle D., 90

Tavakoli, Amir
RMS: Research Management System, 681

Tay, Joo-Hwa
Manufacture of Cement from Sewage Sludge, 697
see Goh, Anthony T. C., 425

Tayem, A.
see Najmi, A., 873

Tayfun, M. Aziz
Joint Distribution of Large Wave Heights and Associated Periods, 1162
Sampling-Rate Errors in Statistics of Wave Heights and Periods, 1157

Tayfur, Gokmen
Applicability of St. Venant Equations for Two-Dimensional Overland Flows over Rough Infiltrating Surfaces, 495

Taylor, Henry F.
see Altobelli, Frank, 17

Teicholz, Paul
Forecasting Final Cost and Budget of Construction Projects, 79

Tener, Robert K.
Empowering High-Performing People to Promote Project Quality, 683

Teskey, W. F.
Use of Laser Targeting in Precise Machinery Surveys, 1018

Thevanayagam, S.
Electrical Response of Two-Phase Soil: Theory and Applications, 451

Thevendran, V.
Stability of Nonsymmetric Cross-Bracing Systems, 815

Thielen, David L.
see Miyake, T. Ted, 1282

Thoft-Christensen, Palle
see Sommer, Anne Mette, 1005

Thomann, Robert V.
Modeling Cadmium Fate at Superfund Site: Impact of Bioturbation, 325

Thomann, Thomas G.
see Hryciw, Roman D., 443

Thomas, H. Randolph
see Sanders, Steve R., 91

Thomas, Hywel Rhys
see Rees, Stephen William, 446

Thomas, Wilbert O., Jr.
see Vogel, Richard M., 1122

Thornton, W. J.
Infrastructure-Management-System Analysis, 1090

Tiedeman, Jane L.
Behavior of Two-Span Continuous Bridge Under Truck Axle Loading, 875

Tien, Hui-Chun
see Tsai, Whey-Fone, 571

Tikalsky, P. J.
see Marek, P., 896

Tinawi, R.
see Filiatrault, A., 887
see Filiatrault, A., 888

Tinawi, René
Damage to Base of LNG Tanks from Blast Loading: Case Study, 746

Tin-Loi, Francis
Shakedown of Frames with Semirigid Connections, 903

Tirella, O. C. "Russ"
Win-Win Negotiating: A Professional's Playbook, 1394
see Bates, Gary D., 1249

Tittlebaum, Marty
see Lea, Reid, 371

Toader, Ioan H. I.
Stability Functions for Members with Semirigid Joint Connections, 833

Tobiason, John E.
Particle Size and Chemical Effects on Contact Filtration Performance, 331

Tobin, L. Thomas, ed.
see Magoon, Orville T., ed., 1336

Tokcan, Selma
see Dökmeci, Vedia F., 1088

Tominaga, Akihiro
see Nezu, Iehisa, 526

Tommelein, I. D.
Interactive Dynamic Layout Planning, 97

Toohey, R. P.
Engineering Women: A View From the Workplace, 663

Toossi, Mostafa
see Singhal, Avinash C., 35

Torrenti, J. M.
Influence of Boundary Conditions on Strain Softening in Concrete Compression Test, 289

Torres-Navarrete, Carlos R.
Longshore Sand Transport Southeast of Bahia de Todos Santos, B.C. Mexico, 1182

Touran, Ali
Probabilistic Cost Estimating with Subjective Correlations, 84

Tracy, Darel
see Nielsen, Richard J., 843

Trani, Antonio A.
see Hobeika, Antoine G., 1053

Trauner, Eric J.
Sludge Ash Bricks Fired to Above and Below Ash-Vitrifying Temperature, 330

Triano, Salvatore J.
see Barbagallo, Joseph C., 1235

Triantafillou, Thanasis C.
see Kaneko, Yoshio, 188
see Kaneko, Yoshio, 189

Trilla, J.
Evaluating Artificial Recharge Needs of Aquifer, 1137

Trout, Thomas J.
Erosion and Sedimentation Processes on Irrigated Fields, 650
see Koluvek, Paul K., 649

Tsai, C. S.
Applications of Viscoelastic Dampers to High-Rise Buildings, 874
see Yang, Rihui, 244

Tsai, Whey-Fone
Finite Analytic Numerical Solutions for Unsaturated Flow with Irregular Boundaries, 571

Tseng, W.
see Wang, M. C., 474

Tucker, Richard L.
see Boles, Walter W., 30

Tue, Nguyen
see König, Gert, 278

Tumeo, Mark A.
Hydrocarbon Exclusion from Ground Water During Freezing, 344
see Stephens, Tamar, 323

Tung, Yeou-Koung
see Yeh, Keh-Chia, 508
see Yen, Ben Chie, ed., 1379

Tunomoto, Meguru
see Kawashima, Kazuhiko, 862

Turkstra, C. J.
see Cesare, M., 1076

Turner, John P.
see Newtson, Craig M., 732

Turner, Robert
see Harris, Gregory P., 1084

U. S. Army Corps of Engineers, Department of the Army
Strength Design for Reinforced-Concrete Hydraulic Structures, 1385

Uber, James G.
Robust Optimal Design for Wastewater Treatment. Part II: Application, 6

Ulanicki, B.
Computer-Aided Optimal Pump Selection for Water Distribution Networks, 1136

Ullrich, C. R.
see Hagerty, M. M., 374

Ulm, Franz-Josef
Fall of a Temple: Theory of Contact Applied to Masonry Joints, 844

Ulrich, H. D.
see Thornton, W. J., 1090

Ulstrup, Carl C.
Rating and Preliminary Analysis of Suspension Bridges, 956

Umeyama, Motohiko
Wave Overtopping on Vertical Boundary and Water-Surface Displacement, 1161

Unjoh, Shigeki
see Kawashima, Kazuhiko, 862

U.S. Army Corps of Engineers
Design of Pile Foundations, 1350

Usami, Tsutomu
Effective Width of Locally Buckled Plates in Compression and Bending, 882

Uzarski, Donald R., ed.
see McNeil, Sue, ed., 1365

Vähä, P. K.
Cognitive Force Control of Excavators, 26
Dynamic Model of Excavator, 25

Valdés, Juan B.
see Raines, Timothy H., 561

Valiantzas, John D.
Border Advance Using Improved Volume-Balance Model, 654

Valioulis, I. A.
see Bogle, G. V., 1148

Vallabhan, C. V. Girija
Analysis of Laminated Glass Units, 895

Valliappan, S.
see Zhao, Chongbin, 236

van der Kaay, Theo
see Van Rijn, Leo C., 1154

Van Dyer, D. B.
Strength and Efficiency of Eccentrically Loaded Layered Timber Columns, 900

van Kampen, Arnold
see Van Rijn, Leo C., 1154

Van Rijn, Leo C.
Transport of Fine Sands by Currents and Waves, 1154

Vanegas, Jorge A.
Simulation Technologies for Planning Heavy Construction Processes, 101
see Hastak, Makarand, 130

Vanluchene, R. D.
see Adeli, Hojjat, 32

Vanmarcke, E.
see Cesare, M., 1076

Vanmarcke, Erik H.
Conditional Simulation of Spatially Correlated Earthquake Ground Motion, 287

Vaughan, Gareth D.
see Strange, Peter S., 689

Vaziri, Hans
Impedance Functions of Piles in Inhomogeneous Media, 458

Vazquez, J. H.
see Williams, A. N., 1170

Vecchio, F. J.
Compression Response of Cracked Reinforced Concrete, 1009
see Polak, M. A., 1001

Veerapaneni, Srinivas
Role of Suspension Polydispersivity in Granular Media Filtration, 308

Vela, Antonio
see Pérez, Rafael, 503

Veletsos, Anestis S.
Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 10

Venkatesh, G.
see Chen, H. L., 979

Venkobachar, C.
see Mittal, Atul K., 320
see Rao, C. R. Nagendra, 321

Ventura, Stephen J.
see Eagan, Patrick D., 298

Verhagen, Henk Jan, ed.
see Hillen, Roeland, ed., 1342

Verzeletti, G.
see Gutierrez, E., 200

Vesilind, P. Aarne
Why Do Engineers Wear Black Hats?, 756
see Crump, Eric L., 1091

Vidic, Radisav D.
see Sorial, George A., 362
see Sorial, George A., 363

Vieux, Baxter E.
DEM Aggregation and Smoothing Effects on Surface Runoff Modeling, 68
Nonpoint-Pollution Model Sensitivity to Grid-Cell Size, 1109

Vigneswaran, Balasubramaniam
see Tobiason, John E., 331

Vijayraghawan, V.
Quality Assurance for Thermal Power Project Construction in India, 739

Villaverde, R., ed.
see Ang, A. H.-S., ed., 1386

Vimonsatit, Vanissorn
see Tin-Loi, Francis, 903

Viner, John G.
see Harwood, Douglas W., 1040

Vinogradov, Oleg
Dynamic Equations for System of Irregularly Shaped Plane Bodies, 280

Vipulanandan, C.
Characterization of Polyester Polymer and Polymer Concrete, 701

Vissing, S.
see Krenk, S., 295

Vissing-Jørgensen, C.
see Krenk, S., 295

Vittal, Nandana
Hydraulic Design of Flume Aqueducts, 509

Vlachos, Evan C.
see Grigg, Neil S., 1135

Vo, Ngoc-Diep
see Ramamurthy, Amruthur S., 557

Vogel, Richard M.
Flood-Flow Frequency Model Selection in Southwestern United States, 1122

Volker, R. E.
see Johnston, A. J., 575

Vonderohe, Alan P.
see Jeljeli, Mohamed N., 85

Voutchkov, Nikolay S.
Heuristic Screening Methodology for Regional Wastewater-Treatment Planning, 337

Voyiadjis, George Z.
Damage Model for Concrete Using Bounding Surface Concept, 260
see Abu-Lebdeh, Taher M., 235
see Channakeshava, Chidambaram, 1078

Vradis, George C.
Macroscopic Conductivities for Flow of Bingham Plastics in Porous Media, 498

Vucetic, Mladen
see Matasović, Neven, 482

Wafa, Faisal F.
see Hasnat, Abul, 968

Wagg, B. T.
see Konrad, J.-M., 432

Wagh, Vinay P.
see Yoon, Hyon H., 696

Wahab, A. F. Abdul
see Coull, Alex, 863

Wallender, W. W.
see Bautista, E., 600
see Bautista, E., 601
see Bautista, E., 641
see Bautista, E., 662
see Childs, J. L., 585

Walsh, Kenneth D.
Evaluation of In-Place Wetting Using Soil Suction Measurements, 428
see Houston, Sandra L., 420

Walsh, Michael R.
Toward Spatial Decision Support Systems in Water Resources, 1110

Walter, Michael F.
see Norman, W. Ray, 647

Walters, Gedfrey A.
see Pugh, Alan, 517

Wang, C. M.
Axisymmetric Buckling of Circular Mindlin Plates with Ring Supports, 850
Buckling of Elliptical Plates Under Uniform Pressure, 999
Stability of Skew Mindlin Plates under Isotropic In-Plane Pressure, 171
Static Analysis of Marine Cables Via Shooting-Optimization Technique, 1173
see Hong, G. M., 201
see Thevendran, V., 815
see Xiang, Y., 148

Wang, Chwen-Shyuan
see Fang, I-Kuang, 951

Wang, Dong-Qing
see Schmidt, Richard J., 192

Wang, Henry T.
Accuracy of Low-Order Models for Simulations of Random Ocean Waves, 1151
Approximate Solutions for Cables Under Generalized Hydrodynamic Loadings, 1163

Wang, Keh-Han
Diffraction of Solitary Waves by Breakwaters, 1150
Water Waves on Flexible and Porous Breakwaters, 208

Wang, Kelvin C. P.
Microcomputer Implementation of Pavement Network Optimization System, 78

Wang, M. C.
Permeability Behavior of a Water Treatment Sludge, 474

Wang, Mu-Han
Evaluating the Capacity of Freeway Weaving Sections, 1052

Wang, P. F.
Note on Estuary-River Models Using Boundary-Fitted Coordinates, 563
Second-Order Radiation Condition for Surface Wave–Body Interaction, 216

Wang, Q. J.
see Dooge, J. C. I., 609

Wang, Shiqiang
Alluvial Resistance in Transition Regime, 534

Wang, Ton-Lo
see Huang, Dongzhou, 942

Wang, Wei
Shear Strength of Reinforced Concrete Deep Beams, 937

Wang, Y.
see Rajapakse, R. K. N. D., 251

Wareham, David G.
Real-Time Control of Aerobic-Anoxic Sludge Digestion Using ORP, 305

Warren, George
Lateral Distribution of Loads in One-Way Continuous Navy Pier Decks, 939

Warszawski, A.
Robot for Interior-Finishing Works, 9

Warwick, J. J.
Accurate Polygon Centroid Computation Using ARC/INFO GIS, 72

Wasimi, Saleh A.
Estimation of Channel Depth During Floods by Canonical Correlation Analysis, 497

Waters, Steve
see French, Richard H., 1139

Wathugala, G. W.
Constitutive Model for Cyclic Behavior of Clays. I: Theory, 417
see Desai, C. S., 418

Watson, Chester C.
see Johns, Derek D., 544

Watson, Dale A.
Engineering: Environmental vs. Developmental Goals, 1218

Watwood, Vernon B.
see Highter, William H., 768

Wayson, Roger L., ed.
see Bondada, Murthy V. A., ed., 1362

Webster, Anthony C.
Japanese Building Design and Construction Technologies, 798

Wechsler, Thomas E. P.
see Khudenko, Boris M., 373

Weed, Richard M.
The Proof is in the Pavement, 1267

Weidlinger, Paul
Sequential Coupling: New Structural Connection for Seismic Control, 816

Weigkricht, Elisabeth
see Lassarre, Sylvain, 1041

Weingardt, Richard
Colorado Dome, 1246

Wekezer, Jerzy W.
Vehicle Impact Simulation, 1067

Wen, Feng, ed.
see Shen, Hsieh Wen, ed., 1364

Wen, J.
see Hornaday, W. C., 111

Wen, Robert K.
Seismic Response of and Design Aids for Arch Bridges, 973

Weng, C. C.
Study on Residual Stress Relief of Welded Structural Steel Joints, 715

West, Adam B.
see Zwerneman, Farrel J., 751

Westerhoff, Paul K.
see Tobiason, John E., 331

Weston, David C.
Partnering-Project Performance in U.S. Army Corps of Engineers, 691

Weyers, Richard E.
see Al-Qadi, Imad L., 1047

Wheat, Dan L.
Thermal and Fatigue Behavior of Polymer Concrete Overlaid Beams, 728

Wheaton, Scott
see Pearson, Mark, 1278

Whipple, William, Jr.
Buffer Zones Around Water-Supply Reservoirs, 1132

White, D. W.
see Liew, J. Y. Richard, 987
see Liew, J. Y. Richard, 988

White, William Rodney
see Wang, Shiqiang, 534

Whitman, Robert V.
see Whittle, Andrew J., 378

Whittaker, J.
see Toohey, R. P., 663

Whittle, Andrew J.
Analysis of Deep Excavation in Boston, 378
see Abramento, Mauricio, 164

Wiberg, Patricia L.
see Long, Charles E., 565

Wiegand, Nancy
see Adams, Teresa M., 65

Wierzbicki, Tomasz
see Huang, Joan, 898

Wiesner, Mark R.
see Chellam, Shankararaman, 500
see Pickering, Karen D., 347
see Veerapaneni, Srinivas, 308

Wijeweera, H.
Creep Behavior of Saline Fine-Grained Frozen Soil, 48

Wilcock, Peter R.
Critical Shear Stress of Natural Sediments, 522
see Parker, Gary, 566

Wilczynski, B.
see Sienkiewicz, Z., 254

Wilkinson, T. L.
Bolted Connection Design Values Based on European Yield Model, 929

Wilkinson, Thomas L.
see McLain, Thomas E., 976

Willetts, B. B.
see Ervine, D. A., 576

Williams, A. N.
Mean Drift Loads on Array of Vertical Cylinders in Narrow Tank, 1170
Wave Diffraction by Array of Thin-Screen Breakwaters, 1184

Williams, Bill
Recyclability of Moisture Damaged Flexible Pavements, 731

Williams, David John
see Wong, K. Y., 486

Williams, F. M.
see Parsons, B. L., 226

Williams, F. W.
see Shen, Hui-shen, 150

Williams, Fred W.
Distortional Buckling Curves for Composite Beams, 927

Wilson, F.
Prediction of Rotating Biological Contactor Efficiency Using TOC, 328

Wilson, W. Stanley, ed.
see Magoon, Orville T., ed., 1336

Winstanley, Graham
Model-Based Planning: Scaled-Up Construction Application, 62

Wolcott, M. P.
see Davalos, J. F., 901

Wolde-Tinsae, Amde M.
see Mirmiran, Amir, 193
see Mirmiran, Amir, 820

Woldt, W. E.
see Dahab, M. F., 800

Wolf, John P.
see Meek, Jethro W., 464

Wolff, Thomas F.
Probabilistic Assessment of Pile Interference, 405

Wong, K. Y.
Methods of Interpreting Structural Incompatibility in Bored Pier Uplift Test, 486

Wong, Tommy S. W.
see Chen, Charng-Ning, 555

Wong, W. G.
see Pau, S. H., 114

Wong, William C. M.
see Russell, Alan D., 93

Wood, David F., ed.
Shotcrete for Underground Support VI, 1382

Wood, Don J.
Modeling Pipe Networks Dominated by Junctions, 550

Wood, Ian R.
Asymptotic Solutions and Behavior of Outfall Flumes, 524

Wood, Sharon L.
Seismic Response of R/C Frames with Irregular Profiles, 1

Woodrich, Anthony M.
Partnering: Providing Effective Project Control, 670

Woods, Richard D.
see Qian, Xuede, 391

Wörman, Anders
Seepage-Induced Mass Wasting in Coarse Soil Slopes, 562

Wörner, Johann-Dietrich
Determination of Load Sharing in Insulating Glass Units, 170

Wray, Warren K., ed.
see Houston, Sandra L., ed., 1390

Wright, Beate
see Thomann, Robert V., 325

Wright, Jeff R., ed.
see Frost, J. David, ed., 1351

Wright, John
see Kulkarni, Ram B., 1049

Wright, Richard N.
Infratechnologies: Tools For Innovation, 1297

Wright, Stephen G.
see Jones, Norman L., 483

Wu, Chao
Model of Dam-Break Floods for Channels of Arbitrary Cross Section, 547

Wu, Chian Min
see Huang, Wen-Cheng, 1131

Wu, Chigong
see Wu, Chao, 547

Wu, Hanqing
Wind-Tunnel Techniques for Assessment of Pedestrian-Level Winds, 263

Wu, Jonathan T. H.
see Monley, Gregory J., 419

Wu, Ray Shyan
Land Use, Climate and Water Supply, 1145

Wu, Tien H.
Evaluation of Runoff and Erosion Models, 606
Stability of Shale Embankments, 381

Wu, Wen-Hwa
see Borja, Ronaldo I., 430

Wu, Xingqiang
see Kemeny, John M., 447

Wu, Yung-Kwang
see Daniel, David E., 387

Wurbs, Ralph A.
Reservoir-System Simulation and Optimization Models, 1129

Wurjanto, Andojo
Irregular Wave Reflection and Runup on Permeable Slopes, 1178

Xi, Yunping
see Bažant, Zdeněk P., 822

Xiang, Y.
Mindlin Plate Buckling with Prebuckling In-Plane Deformation, 148
Transverse Vibration of Thick Annular Sector Plates, 242
see Wang, C. M., 171
see Wang, C. M., 850

Xin, L. J.
Time Analysis of Partially Prestressed Beam Subjected to Changing Loads, 952

Xu, Chengchao
see Jowitt, P. W., 1102

Xu, D. W.
see Chowdhury, R. N., 487

Xu, Lei
Computer-Automated Design of Semirigid Steel Frameworks, 906

Yabuki, Nobuyoshi
HyperDocument Model for Design Standards Documentation, 63

Yalçın, Üsame
Effect of Slab on Inelastic Response of R/C Buildings, 883

Yamaguchi, Eiki
Accurate and Efficient Method for Analysis of Reinforced Concrete Structures, 921

Yamamuro, Jerry A.
see Lade, Poul V., 155

Yamasaki, Kenji
see Huang, Scott L., 490

Yanful, Ernest K.
Oxygen Diffusion through Soil Covers on Sulphidic Mine Tailings, 449

Yang, C. Y.
see Zhang, L., 207

Yang, Frank
see Meehan, Richard L., 771

Yang, G.
Effects of Wastewater Composition on Stability of UASB, 358

Yang, Henry T. Y.
Simple Model for Optimal Control of Tall Buildings, 857
see Chen, Charles C. T., 248

Yang, Jae-Guen
see Plaut, Raymond H., 969

Yang, Rihui
Far-Field Modeling in 3D Dam-Reservoir Interaction Analysis, 244

Yang, Yeong-Bin
see Kuo, Shyh-Rong, 806

Yankelevsky, David Z.
see Farhey, Daniel N., 915

Yao, Budan
Prediction of Distributed Discrete Concrete Cracking in RC Analysis, 964

Yasuhara, Kazuya
see Hyde, Adrian F. L., 480

Yates, J. K.
Construction Decision Support System for Delay Analysis, 95

Yeh, Keh-Chia
Moment Model of Nonuniform Channel-Bend Flow. I: Fixed Beds, 538
Moment Model of Nonuniform Channel-Bend Flow. II: Erodible Beds, 539
Uncertainty and Sensitivity Analyses of Pit-Migration Model, 508

Yeh, Yi-Cherng
Building KBES for Diagnosing PC Pile with Artificial Neural Network, 55

Yen, Ben Chie, ed.
Reliability and Uncertainty Analyses in Hydraulic Design, 1379

Yen, J. Y. Richard
Direct Analysis of Slender Columns with P-Delta Effects, 855

Yen, Shih-Tzung
see Fang, I-Kuang, 951

Yeong, C. L. Y.
see Fang, H. H. P., 357

Yi, Waon-Ho
Posterior Time-Step Adjustment in Pseudodynamic Testing, 230

Yogachandran, C.
see Arulanandan, K., 477

Yokosi, S.
see Kawanisi, K., 533

Yoo, C. H.
see Stallings, J. M., 928

Yoon, Hyon H.
Thermal Degradation of Antistripping Agents and Enhanced Performance by Curing, 696

Yoon, Jaewan
Parameter Estimation of Linear and Nonlinear Muskingum Models, 1140

Yoon, Jeyong
see DiGiano, Francis A., 302

York, Don
see Hanson, Adrian T., 350

Yu, Fang Xin
see Naghavi, Babak, 659

Yu, G.
Object-Oriented Finite Element Analysis Using EER Model, 962

Yu, P.
Three-Degree-of-Freedom Model for Galloping. Part I: Formulation, 291
Three-Degree-of-Freedom Model for Galloping. Part II: Solutions, 292

Yu, Shinyuan
General Stress-Dependent Elastic Moduli for Cross-Anisotropic Soils, 468

Yu, Tongxi
see Chen, Faliang, 225

Yu, W. W.
see LaBoube, R. A., 930

Yu, Weizu
see Crissman, Randy D., 569

Yu, Xiping
Analysis of Wave Scattering by Submerged Circular Disk, 256

Yuan, Deren
Automated Surface Wave Method: Inversion Technique, 445

Yuan, Jie
see Chou, Karen C., 991

Zack, James G., Jr.
"Claimsmanship": Current Perspective, 110

Zafir, Zia
see Siddharthan, Raj, 270
see Siddharthan, Raj, 271

Zaman, Musharraf
see Najjar, Yacoub, 481

Zaniewski, John
see Wang, Kelvin C. P., 78

Zarghamee, Mehdi S.
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. I: Experiments, 958
Coating Delamination by Radial Tension in Prestressed Concrete Pipe. II: Analysis, 959

Zembaty, Zbigniew
Spatial Seismic Excitations and Response Spectra, 293

Zhang, Hai-Yan
Minimum Lateral Stiffness for Equally Spaced Braces in Columns, 261

Zhang, L.
Stability of Active-Tendon Structural Control with Time Delay, 207

Zhang, Ruichong
see Dimentberg, M. F., 156

Zhang, Y.
see Hobeika, A. G., 1062

Zhang, Yaonian
Behavior of Large Bored Piles in Fuzhou, 408

Zhao, Chongbin
Simplified Method for Dynamic Response of Tapered Structure, 236

Zhao, Dongsheng
see Hu, Sau-Lon James, 168

Zhao, Zhiye
Direct Continuum Approach to Three-Dimensional Sensitivity Analysis, 275

Zhou, Donghuo
Flow through Porous Bed of Turbulent Stream, 169

Zhou, Y.
Position-Force Adaptive Control for Construction Robots, 27

Zhou, Yongsheng
see Stathopoulos, Theodore, 239

Ziegler, J.
see Hatfield, K., 333

Zils, John
see Iyengar, Hal, 1260

Zimmerman, David C.
Structure/Control Synthesis with Nonnegligible Actuator Mass, 20

Zimmerman, James J.
Stochastic Optimization Models for Structural-Reliability Analysis, 818

Zingone, Gaetano
see Romano, Filippo, 214
see Romano, Filippo, 810

Zoghi, M.
Short-Span Bridge Solutions, 1255

Zografos, Kostas G.
Analytical Framework for Minimizing Freeway-Incident Response Time, 1063

Zollinger, Dan G.
see Tang, Tianxi, 1068

Zoppou, C.
A New Point Estimate Method for Water Resources Modeling, 572

Zorraquino, V.
see Garcia-Navarro, P., 514

Zou, X.
see Han, Kye, 172

Zouein, P. P.
see Tommelein, I. D., 97

ZumBrunnen, Craig
see Jankowski, Piotr, 70

Zuraski, Patrick D.
Service Performance of Steel Bridges Compared to Fatigue-Life Predictions, 978

Zwerneman, Farrel J.
Fatigue Damage to Steel Bridge Diaphragms, 751

Zywicz, Edward
see Wekezer, Jerzy W., 1067